

# COMMUNITY PARTNERS IN CARE: 6-MONTH OUTCOMES OF TWO QUALITY IMPROVEMENT DEPRESSION CARE INTERVENTIONS IN MALE PARTICIPANTS

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**Objective:** Limited data exist on approaches to improve depression services for men in under-resourced communities. This article explores this issue using a sub-analysis of male participants in Community Partners in Care (CPIC).

**Design:** Community partnered, cluster, randomized trial.

**Setting:** Hollywood-Metropolitan and South Los Angeles, California.

**Participants:** 423 adult male clients with modified depression (PHQ-8 score  $\geq 10$ ).

**Interventions:** Depression collaborative care implementation using community engagement and planning (CEP) across programs compared with the more-traditional individual program, technical assistance (Resources for Services, RS).

**Main Outcomes Measured:** Depressive symptoms (PHQ-8 score), mental health-related quality of life (MHRQL), mental wellness, services utilization and settings.

**Results:** At screening, levels of probable depression were moderate to high (17.5%–47.1%) among men across services sectors. Intervention effects on primary outcomes (PHQ-8 score and MHRQL) did not differ. Men in CEP compared with RS had improved mental wellness (OR 1.85, 95% CI 1.00–3.42) and reduced hospitalizations (OR .40, 95% CI .16–.98), with fewer mental health specialty medication visits (IRR 0.33, 95% CI .15–.69), and a trend toward greater faith-based depression visits (IRR 2.89, 95% CI .99–8.45).

**Conclusions:** Exploratory sub-analyses suggest that high rates of mainly minority men in under-resourced communities have

## BACKGROUND

Although depression is a leading cause of disability worldwide, low rates of identification and treatment persist in primary care.<sup>1,2</sup> Collaborative care interventions for depression in primary care have been found to improve quality of care and outcomes for depressed adults overall; these findings have shown similar improvement in outcomes for minorities and Whites, and in two of the studies, researchers found greater outcome benefit among minorities, including African Americans and Latinos.<sup>3–5</sup> Nonetheless, ethnic minority populations, particularly minority males, are less likely to undergo primary care screening for mental disorders and

have diminished access to, and quality of, care relative to women or White males,<sup>2, 6–13</sup> leaving them with a larger burden of disease relative to more advantaged populations.<sup>14</sup> Factors contributing to decreased care access and quality in this population include alternative symptom presentation, stigma, reduced health care utilization rates, and provider bias.<sup>2,10,15–22</sup> Additionally, older men often associate depression with weakness and are more reluctant to express emotional concerns to physicians.<sup>1,2,10,17,22–25</sup> Nevertheless, minorities respond well to depression treatments,<sup>26</sup> and a recent meta-analysis found no gender differences in response to cognitive behavioral therapy (CBT) or pharmacotherapy for depression.<sup>27</sup>

high prevalence of depression. A multi-sector coalition approach may hold promise for improving community-prioritized outcomes, such as mental wellness and reduced hospitalizations for men, meriting further development of this approach for future research and program design. *Ethn Dis.* 2017;27(3):223–232; doi:10.18865/ed.27.3.223

**Keywords:** Community-based Participatory Research; Collaborative Care; Depression; Mental Health

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Because minority males are at an increased risk for adverse health and mental health outcomes,<sup>22,25</sup> yet are less likely to seek health care for depression, this population may be more likely to engage in support from alternative settings with established trust such as faith-based programs.

Community Partners in Care is a group-level randomized trial comparing a multi-sector coalition approach (Community Engagement and Planning, CEP) with individual program expert assistance (Resources for Services, RS) to implement an expanded model of collaborative care for de-

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pression across health care, social services and community-based settings in under-resourced communities in Los Angeles. Clients with depression were identified across these settings, and the majority (82.9%) of male participants screened were African American or Latino. Both CEP and RS supported implementation of the same evidence-based collaborative care toolkits. RS supported trainings through webinars, and CEP supported four months of coalition meetings to develop a network to support implementation over a year. Main analyses for the overall sample suggested

that CEP relative to RS improved mental health-related quality of life (a primary outcome), increased mental wellness, and reduced behavioral health hospitalizations and homelessness or having multiple risk factors for homelessness at six months; with evidence in the primary analyses for improved mental health-related quality of life and reduced behavioral health hospitalizations over the first year.<sup>28,29</sup> Results have not previously been reported separately for men.

To fill this gap, our current study provides an exploratory sub-analysis for mainly African American and Latino men participating in CPIC. Our goal was to first describe the distribution of depressed men across health care and community-based services sectors; and then to compare effectiveness of the CEP and RS interventions at the six-month follow-up interval. We expected to find depressed men distributed across the health care and social-community sectors, suggesting that a comprehensive approach may be needed to reach men in these communities. For the intervention comparison, we expected to observe a pattern generally consistent with the overall sample, with some benefits of CEP relative to RS for mental health-related quality of life and at least some secondary outcomes. By increasing services in areas frequented and trusted by men, we thought CEP would engage depressed men more frequently in services or supports. While the sample is small for analyses of specific ethnic groups, we also explored intervention comparisons for African American and Latino men separately to inform future research.

## METHODS

Community Partners in Care (CPIC) is a group-level randomized study comparing the effectiveness of two approaches for implementing evidence-based, depression care quality improvement (QI) toolkits in low-income community services settings. The participating communities include Hollywood-Metropolitan and South Los Angeles. The community-partnered, participatory research (CPPR) approach was used to engage community agencies and members as co-leaders in designing and implementing the study. Details on study design, baseline information, six-month and 12-month follow-up results for the overall cohort are described elsewhere.<sup>28-30</sup>

The two implementation approaches used were Resources for Services (RS) and Community Engagement and Planning (CEP). Both supported implementation of evidence-based depression toolkits from prior studies and adapted for use in health care and community-based settings.<sup>31-33</sup> The toolkits (available in hardcopy, on flash-drives and online) included manuals for CBT, clinician assessment, medication management, case management and patient education materials.<sup>34</sup>

In RS, toolkits were distributed and a “train-the-trainer” approach was utilized to provide technical assistance in reviewing and implementing toolkit components. In each community, an expert team offered 12 webinars focusing on team management, CBT, care management, and patient education. Site visits were offered to primary care

agencies regarding clinical assessment and medication management.

In CEP, agency representatives met biweekly for 4 months across sectors to review toolkit components and develop a written training and implementation plan to best address community assets and culture. In addition to providing participating programs with toolkits, coalitions developed and offered programs and providers training. Each CEP coalition was co-led by community representatives, and community leaders were trained to co-lead all toolkit trainings to programs/providers. Coalitions were supported to develop innovations to meet intervention goals and to monitor implementation according to their written plan. Across the two communities, CEP plans included full-day training conferences, follow-up with individual agencies, and supervision for community health workers, therapists and case-managers. Elsewhere, we report that CEP relative to RS resulted in more training being offered, more participation in training by eligible programs and providers, and specific innovations in program design, inclusive of alternative health practices.<sup>35</sup>

The agencies eligible for participation in the study included organizations providing services for mental health, primary care, substance abuse, and social services (prisoner re-entry, family preservation, homeless services and shelters), faith-based centers, park recreation centers, barbershops and exercise clubs. From 60 potentially eligible agencies, 133 potentially eligible programs were identified and randomized, of which 95 were confirmed as eligible and agreed to par-

ticipate at final site visits. Programs in the two study arms had similar neighborhood demographics (age, sex, race, population density, income).<sup>30</sup>

Within programs, between March 2010 and November 2010, clients were screened for eligibility when visiting participating sites or program-sponsored events hosted by trained community members blinded to intervention condition. Staff approached 4,649 adults (aged >18 years) over 2-3 days per program; 4,440 agreed to screening. Study eligibility was limited to clients providing contact information and those who scored as depressed based on having modified 8-item Patient Health Questionnaire (PHQ-8) score of  $\geq 10$ . Of 4,440 screened, 1,322 were eligible, 1,246 enrolled, 981 completed baseline, and 759 completed 6-month follow-up telephone surveys.<sup>29</sup> The analysis included 423 males with baseline or follow-up data (Figure 1).

Pre-specified primary outcomes include poor mental health-related quality of life (MHRQL) by 12-item Mental Health Composite Score (MCS-12  $\leq 40$ , a standard cut-point for poor MHRQL, one standard deviation below population mean) and exceeding the standard cut-point for mild/moderate depression on the PHQ-9 (score  $\geq 10$ ).<sup>36,37</sup> As part of the participatory design process, the community members developed high-priority outcomes for the study,<sup>28</sup> including mental wellness (defined as having some feeling of being calm or peaceful, having energy, or being happy in the prior four weeks) and probability of behavioral health hospitalization. Other exploratory secondary outcomes include

services utilization such as any use of antidepressant medication as an indicator of treatment, use of primary care and mental health specialty services, and use of any community-based and faith-based programs for depression.

## Statistics

We conducted univariate analyses to describe the screening sample and bivariate analyses to compare types of screening locations for sociodemographic factors and probable depression. Bivariate analyses were performed to describe baseline characteristics of the analytic sample of men by intervention status. To compare effects of CEP and RS on six-month outcomes, we conducted intent-to-treat, comparative-effectiveness analyses using logistic regression models for dichotomous measures and Poisson regression models for counts. We conducted exploratory stratified analyses among men for the two largest race/ethnic groups (African American; Latino) to inform future studies.

The CPIC study used non-response weighting to address missing data for non-enrollment among eligible clients and for attrition.<sup>38,39</sup> We also used a hot-deck multiple imputation technique for item non-response and an approximate Bayesian bootstrap for unit non-response among the analytic sample.<sup>40,41</sup> We conducted imputations for <5% for all variables except for baseline income and Mini International Neuropsychiatric Interview variables, which had higher rates of item-level non-response. For male-subgroup analyses, we used Taylor series linearization with a subpopulation statement in SUDAAN version 11.0.1

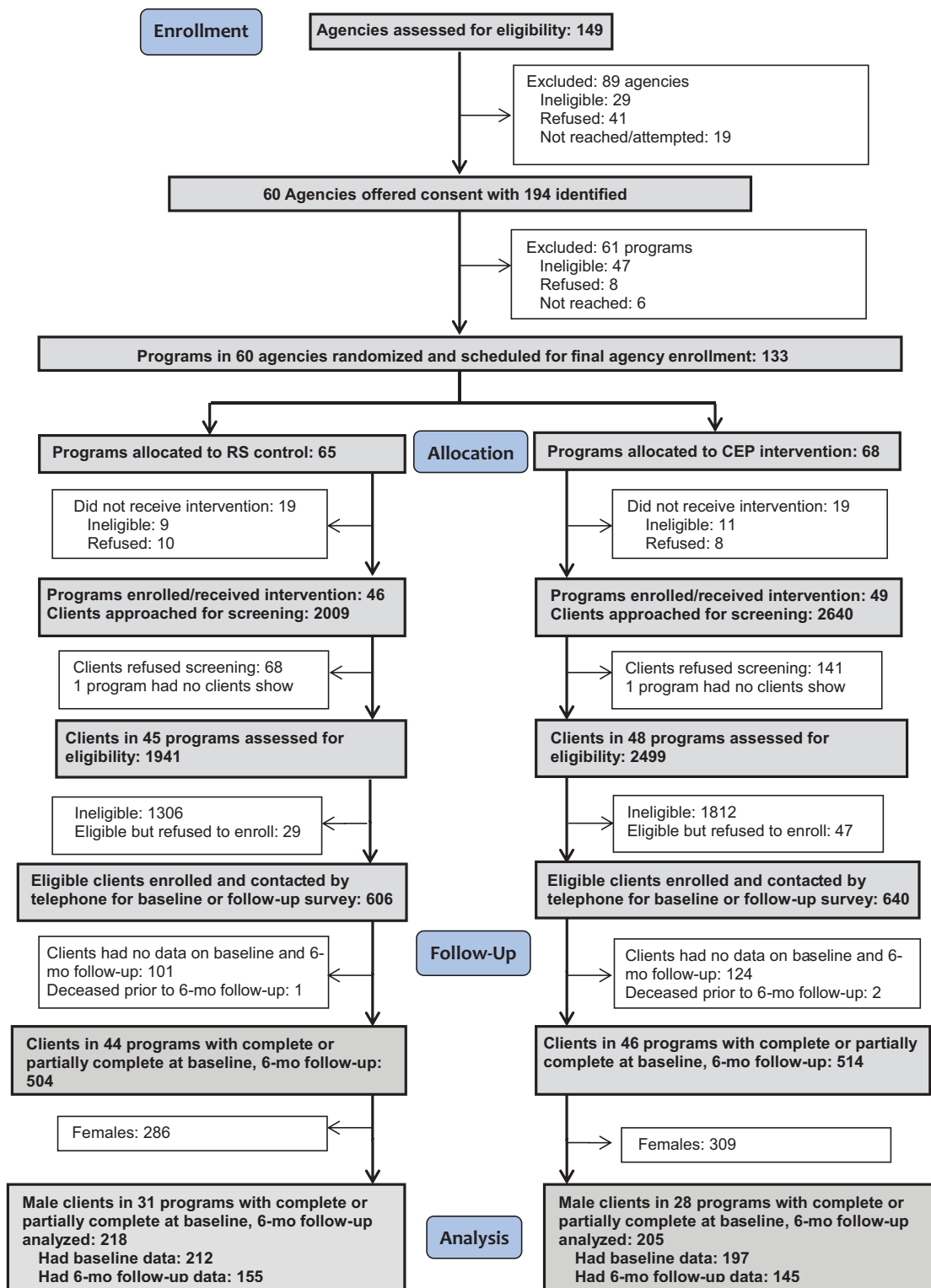


Figure 1. Trial profile: Community Partners in Care, Men's Substudy, Los Angeles, CA, 2010–2012.

**Table 1. Characteristics of screened males by services sector for screening<sup>a</sup>**

Characteristic	Overall, N=2054	Primary care, n=815	Mental health, n=138	Substance abuse, n=489	Homeless, n=247	Social community services, n=365	P
Age mean (SD), y	46.9 (15.0)	44.4 (12.1)	43.6 (12.8)	43.9 (13.4)	47.1 (11.8)	57.5 (19.8)	.029
Married or living with partner, n (%)	526 (25.6)	196 (24.1)	38 (27.7)	122 (25.0)	34 (13.8)	136 (37.2)	.024
Race/Ethnicity, n (%)							<.001
Latino	828 (40.3)	383 (47.0)	65 (47.1)	181 (36.9)	51 (20.6)	148 (40.7)	
African American	874 (42.5)	284 (34.9)	53 (38.3)	272 (55.5)	149 (60.3)	116 (31.8)	
Non-Hispanic White	256 (12.4)	108 (13.3)	13 (9.4)	21 (4.3)	33 (13.2)	81 (22.1)	
Other	96 (4.7)	39 (4.7)	7 (5.2)	16 (3.3)	15 (5.9)	20 (5.4)	
No health insurance, n (%)	1197 (58.3)	529 (65.0)	58 (41.9)	330 (67.5)	160 (64.6)	121 (33.1)	<.001
Family income from work, past 12 months ≤\$10,000, n (%)	1362 (66.3)	574 (70.5)	96 (69.9)	317 (64.8)	197 (79.8)	177 (48.5)	<.001
Probable depressive disorder, n (%) <sup>b</sup>	664 (32.3)	286 (35.1)	65 (47.1)	152 (31.1)	97 (39.3)	64 (17.5)	<.001

a. Data were multiply imputed and weighted for eligible sample for enrollment; Chi-square tests were used to compare differences across five services sectors accounting for clustering (clients within programs).

b. Patient health questionnaire-8 (modified ≥10).

(RTI International, Research Triangle, NC), accounting for clustering (clients within programs),<sup>42</sup> weight-

ing, and multiple imputations.<sup>43</sup> Analysis results for binary outcomes are presented as odds ratios,

and for Poisson regression analyses of count data as incidence rate ratios. We supplement adjusted models

**Table 2. Baseline characteristics of depressed male clients in outcomes analysis, by intervention<sup>a</sup>**

Characteristic	Overall, N=423	RS, n=218	CEP, n=205	P
Age mean (SD), y	46.8 (12.6)	46.0 (12.1)	47.7 (13.0)	.43
Married or living with partner, n (%)	85 (20.2)	40 (18.0)	45 (22.5)	.37
Race/Ethnicity, n (%)				.89
Latino	147 (35.5)	77 (35.5)	70 (35.6)	
African American	205 (46.7)	98 (45.2)	107 (48.3)	
Non-Hispanic White	48 (12.1)	27 (12.9)	21 (11.2)	
Other	23 (5.7)	16 (6.4)	7 (5.0)	
< High school, n (%)	161 (37.9)	84 (38.9)	77 (36.9)	.72
No health insurance, n (%)	272 (64.0)	151 (69.7)	121 (58.1)	.12
Family income from work, past 12 months ≤ \$10,000, n (%)	316 (74.4)	166 (77.9)	150 (70.8)	.17
12-month depressive disorder, n (%)	285 (67.2)	148 (68.2)	137 (66.2)	.69
PHQ-8, mean (SD)	15.2 (4.2)	15.2 (4.2)	15.3 (4.1)	.88
Poor mental health-related quality of life, n (%) <sup>b</sup>	234 (55.1)	116 (52.6)	119 (57.7)	.27
Mental wellness, n (%) <sup>c</sup>	167 (39.2)	90 (41.0)	77 (37.3)	.50
Any hospitalizations for ADM problems in past 6 months, n (%)	63 (14.7)	34 (15.5)	29 (13.9)	.61
Took antidepressant in past 6 months, n (%)	147 (34.0)	72 (32.2)	75 (35.9)	.51
Utilization of mental health specialty services in past 6 months, n (%)	23 (5.5)	18 (8.6)	4 (2.3)	.14
Mental health specialist visits receiving advice about medication in past 6 months, mean (SD)	3.2 (8.2)	2.7 (5.2)	3.7 (10.5)	.23
Outpatient PCP services for depression in past 6 months, mean (SD)	1.5 (3.7)	1.4 (4.2)	1.5 (3.1)	.74
Religious services for depression in past 6 months, mean (SD)	2.8 (13.5)	3.6 (17.4)	2.0 (7.2)	.16

a. Data were multiply imputed and weighted for eligible sample for enrollment; Chi-square test was used for a comparison between the two groups accounting for the design effect of the cluster randomization.

b. Mental Health Composition Score of SF-12 (MCS12) ≤ 40; one standard deviation below population mean.

c. At least good bit of time on any of three items: feeling peaceful or calm, being a happy person, having energy.

RS, Resources for services or individual program technical assistance; CEP, Community engagement and planning; PCP, primary care provider; PHQ, patient health questionnaire; ADM, alcohol, drug abuse, and mental health.

**Table 3. Outcomes and services utilizations at 6 months, by intervention**

	Unadjusted estimates <sup>a</sup>		Adjusted analysis <sup>b</sup>	
	RS	CEP	CEP vs RS test (95% CI)	P
Primary outcomes	n/total (%)	n/total (%)	OR	
PHQ-9≥10	104/154 (67.5%)	89/144 (61.8%)	.68 (.30-1.55)	.317
Poor mental health-related quality of life (MCS12≤40)	73/154 (47.4%)	62/144 (43.1%)	.87 (.53-1.45)	.579
Community-prioritized (secondary)				
Mental wellness	52/154 (33.8%)	66/145 (45.5%)	1.85 (1.00-3.42)	.049
Any hospitalizations for ADM problems in past 6 months	20/155 (12.9%)	6/145 (4.1%)	.40 (.16-.98)	.046
Other secondary (services use in past 6 months)				
Took antidepressant	63/155 (40.6%)	52/144 (36.1%)	.75 (.41-1.37)	.326
Utilization of mental health (MH) specialty services	91/155 (58.7%)	72/145 (49.7%)	.87 (.54-1.39)	.532
	mean (SD)	mean (SD)	IRR	
Mental health specialist visits receiving advice about medication, mean (SD)	6.5 (25.5)	2.4 (4.1)	.33 (.15-.69)	.004
Outpatient PCP services for depression, mean (SD)	.9 (2.6)	1.4 (3.2)	1.44 (.83-2.51)	.189
Religious services for depression, mean (SD)	.3 (1.3)	.9 (4.8)	2.89 (.99-8.45)	.052

a. Raw data without weighting or imputation (N=300).

b. Adjusted analyses used multiply imputed data at 6 months (N=423), weighted for eligible male sample for enrollment; logistic regression models for binary variables (presented as odds ratio, OR) or Poisson regression models for count variables (presented as incidence rate ratios, IRR), adjusted for baseline status of the dependent variable, age, education, race/ethnicity, 12-month depressive disorder, and community and accounted for the design effect of the cluster randomization.

RS, Resources for services or individual program technical assistance; CEP, Community engagement and planning; PHQ, patient health questionnaire; PCP, primary care provider; ADM, alcohol, drug abuse, and mental health.

with unadjusted raw data to assess robustness. Given the overall exploratory approach, we discuss findings with a borderline level of significance ( $P < .10$ ), presenting actual P-values. Given the smaller samples in the stratified analyses of each minority group, we present only bivariate models and data without imputation, with P based on Fisher’s exact test (2-sided).

## RESULTS

### Screening Demographics

Across sectors where screening occurred, the majority of men were African American or Latino, low-income and single, with a high percentage uninsured (Table 1). The percentage with probable depression ranged from 17.5% in community-based programs to 35.1% in primary care and 47.1% in mental health specialty programs.

### Baseline Participant Characteristics

Overall, 46.7% of male participants were African American, 35.5% Latino, 12.1% White, and 5.7% other ethnicity/race. Further, 67.2% were diagnosed with a 12-month depressive disorder and 55.1% reported poor MHRQL at baseline. On average, males scored as moderately depressed (mean PHQ-8=15.2, SD 4.2). There were no significant differences by study arm in demographic or socioeconomic variables, mental health status, and functioning (Table 2).

### Six-month Follow-up

Among men, there were no significant differences between CEP and RS groups in primary outcomes (PHQ-9≥10, poor MHRQL) at six months (Table 3). Among community-prioritized outcomes, men in CEP compared with RS were more likely to re-

port mental wellness (OR 1.85, 95% CI 1.00–3.42,  $P = .049$ ) and less likely to have any hospitalization for behavioral problems in the past six months (OR .40, 95% CI .16–.98,  $P = .046$ ).

Although the percentage of participants with any mental health specialty visit did not differ for CEP and RS ( $P = .334$ ), RS participants had a significantly greater mean number of mental health outpatient visits with medication management compared with CEP participants (IRR .33, 95% CI .15–.69,  $P = .004$ ). Meanwhile, men screened in CEP programs had a trend toward higher mean number of visits to religious programs for depression services (IRR 2.89, 95% CI .99–8.45,  $P = .052$ ).

In exploratory stratified analyses by race/ethnicity (Table 4), Latino men in CEP were more likely to report having mental wellness compared with those in RS ( $P = .017$ ). There

**Table 4. Community-prioritized outcomes at 6 months, by specific minority groups and intervention<sup>a</sup>**

	Latino men			African American men		
	RS, n/total (%)	CEP, n/total (%)	P	RS, n/total (%)	CEP, n/total (%)	P
Mental wellness	16/56 (28.6%)	25/48 (52.1%)	.017	27/70 (38.6%)	27/74 (36.5%)	.864
Any hospitalizations for ADM problems in past 6 months	7/57 (12.3%)	1/48 (2.1%)	.068	11/70 (15.7%)	4/74 (5.4%)	.056

a. Raw data without weighting or imputation; P values were based on Fisher's exact test (2-sided).

RS, Resources for services or individual program technical assistance; CEP, Community engagement and planning; ADM, alcohol, drug abuse, and mental health.

were trends among African American and Latino men in CEP compared with RS toward a lower probability of hospitalization for behavioral problems in the past six months ( $P=.056$  and  $.068$ , respectively).

## DISCUSSION

A recent Cochrane Collaborative Review noted that Community Partners in Care is one of the only rigorous studies of the effects of a community coalition compared with an alternative intervention to affect health of minority populations.<sup>44</sup> Thus, it is important to explore potential implications for groups not well-represented in intervention trials, such as depressed minority men. This exploratory sub-analysis focuses primarily on determining whether six-month outcomes found to be significant for the overall sample in the CPIC study can be confirmed for low-income, primarily African American and Latino men. No significant differences by study arm (CEP and RS) were found in the standard cut-points for probable depression on PHQ-8, or for poor MHRQL by MCS-12 for which there was a significant effect in the overall sample.<sup>28</sup> However, for community-prioritized outcomes of increased mental wellness and reduced

probability of any behavioral-health hospitalization, we found modest benefits from CEP over RS for men, consistent with overall sample results and thus confirming some secondary benefits for men. Further, stratified analyses suggested trends toward improved mental wellness among Latino men and reduced hospitalizations among African American and Latino men, suggesting that each cultural subgroup may have benefited from the coalition approach relative to expert training for programs, an issue for exploration in future research.

In designing CPIC, community members, including men, identified mental wellness (feeling peaceful or calm, being happy, and having energy at least a good amount of time) as the highest prioritized outcome, in part because it was thought that a strength-based framing of depression would be more acceptable in communities. One explanation for greater observed improvement among men under CEP compared with RS in mental wellness, not observed for main mental health outcomes (ie, poor MHQRL by MCS-12), is that men may find mental wellness a more socially acceptable way of talking about changes in mental health status. Studying mental wellness is another area for future research for minority men in under-resourced communities.

Community engagement and planning was aimed to promote collaboration of health care and community-based agency partners in improving depression services across diverse programs such as faith-based, prisoner re-entry, barbershops, and parks and recreation centers as well as health care programs, as noted by community partners during planning as salient locations to address personal issues. High percentages of depressed men were found in mental health, primary care, substance abuse, and homeless services, suggesting that such settings may help engage depressed minority men in intervention research. Further, we found a significantly greater use of religious programs for depression care in CEP relative to RS among men, consistent with the overall sample, suggesting this sector may be an important partner with health care for addressing depression in minority men. As in the main sample, a decrease in the number of medication specialty visits (but not in probability or access) was noted in men under CEP relative to RS, which could raise concerns about appropriate medication management. However, there was no significant decline in any health measure under CEP and there was a trend toward decreased hospitalization rates, suggesting more, rather than less, stabili-

zation, which may be consistent with a substitution effect such as greater faith-based support. Important areas for future research may include engaging depressed minority men visiting diverse service settings in effective treatment, as well as the added value of faith-based and other community-based settings as partners to health care in supporting improved outcomes.

Limitations of this study include that participants were recruited from

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*...for community-prioritized outcomes of increased mental wellness and reduced probability of any behavioral-health hospitalization, we found modest benefits from CEP over RS for men...*

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two Los Angeles communities and the main ethnic groups were Latinos and African Americans; thus, results may not be generalizable to other communities or ethnic groups. Statistical power for intervention comparisons was limited for men overall and more so among African American and Latino men, necessitating an exploratory approach. All outcomes data relied on self-reported surveys, which may be influenced by recall bias. Despite these limitations, giv-

en the uniqueness of the study and the relative lack of outcomes data on service delivery approaches for minority depressed men, the analyses provide useful information to inform future research on community coalition compared with expert training approaches to build capacity to address depression disparities.

## CONCLUSION

Our current study, while exploratory, suggests that mainly minority men, similarly to the overall CPIC sample of men and women, benefited from the CEP approach relative to the RS approach. The main observed gains were in mental wellness and reduced probability of behavioral health hospitalization. Future coalition intervention studies might benefit from a stronger focus on engagement of minority men in treatment, while including community-based programs, which successfully engage minority men, as both screening sites and partners with health care in interventions. Future studies should include larger samples of Latino and African American men and other ethnic groups and geographic areas to offer insights on how to best frame depression, gain trust in services, and improve clinical and community-defined outcomes for diverse groups of men. Such studies may benefit from other innovations in engagement of diverse subgroups of minority men, for example to clarify relevant trusted community service locations for men across cultural, age and other background characteristics.

## CONFLICT OF INTEREST

No conflicts of interest to report.

## AUTHOR CONTRIBUTIONS

Research concept and design: Mehta, Brown, Chung, Jones, Gilmore, Miranda, Wells; Acquisition of data: Mehta, Chung, Gilmore, Miranda, Wells; Data analysis and interpretation: Mehta, Brown, Chung, Jones, Tang, Gilmore, Miranda, Wells; Manuscript draft: Mehta, Brown, Chung, Jones, Miranda, Wells; Statistical expertise: Tang; Acquisition of funding: Chung, Wells; Administrative: Mehta, Brown, Chung, Jones, Gilmore, Wells; Supervision: Chung, Wells

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## CPIC 6-Month Outcomes in Depressed Men - Mehta et al

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