

Integration of Mental Health Services Into Primary Care Overcomes Ethnic Disparities in Access to Mental Health Services Between Black and White Elderly

Liat Ayalon, Ph.D., Patricia A. Areán, Ph.D.,
Karen Linkins, Ph.D., Marty Lynch, Ph.D., Carroll L. Estes, Ph.D.

Objective: The authors evaluated whether the integration of mental health into primary care overcomes ethnic disparities in access to and participation in mental health (MH) and substance abuse (SA) treatment. **Methods:** The authors conducted site-specific analysis of a multisite clinical trial to compare participation of black and white elderly in an integrated model of care (all MH/SA services are provided at primary care clinics) versus an enhanced referral model of care (all MH/SA services are provided at specialized MH clinics). In all, 183 elderly (56% black) diagnosed with depression (82%), anxiety (32%), and/or problem drinking (22%) were randomized. **Results:** Blacks in the integrated arm were significantly more likely to have at least one MH/SA visit (77.5%) relative to blacks in the enhanced referral arm (22%; adjusted odds ratio [OR]: 14.13; confidence interval [CI]: 4.76–41.95, Wald χ^2 : 22.75, $df=1$, $p<0.0001$). There was no statistically significant difference between whites in the integrated treatment arm (66.6%) and whites in the enhanced referral arm (46.9%, adjusted OR: 2.98; CI: 0.98–9.06, Wald χ^2 : 3.72, $df=1$, $p=0.05$). In the enhanced referral arm, blacks had a significantly smaller number of overall MH/SA visits (mean [SD]: 2.08 [5.28]) relative to whites (mean [SD]: 5.31 [7.76], adjusted incident rate ratio [IRR]: 2.87; CI: 1.06–7.73, Wald χ^2 : 4.37, $df=1$, $p=0.03$). In the integrated arm, there was no statistically significant difference between blacks (mean [SD]: 3.22 [3.71]) and whites (mean [SD]: 2.75 [4.29], adjusted IRR: 0.58; CI: 0.25–1.33, Wald χ^2 : 1.64, $df=1$, $p=0.20$). For both groups, time between baseline evaluation to first MH/SA visit was significantly shorter in the integrated treatment arm (for blacks: mean days [SD]: 31.06 [28.66]; for whites: mean days [SD]: 22.18 [33.88]) than in the enhanced referral arm (mean [SD]: 62.45 [43.53], adjusted hazard ratio [HR]: 7.82; CI: 3.65–16.75, Wald χ^2 : 28.02, $df=1$, $p<0.0001$; mean [SD]: 63.46 [32.41], adjusted HR: 2.48; CI: 1.20–5.13, Wald χ^2 : 6.02, $df=1$, $p=0.01$, respectively). **Conclusion:** An integrated model of care is particularly effective in improving access to and participation in MH/SA treatment among black primary care patients. (Am J Geriatr Psychiatry 2007; 15:906–912)

Key Words: Mental health services, ethnic minorities, access to care, disparity

Received July 21, 2006; revised November 28, 2006; accepted February 20, 2007. From the School of Social Work, Bar Ilan University, Ramat Gan, Israel (LA); the Langley Porter Psychiatric Institute (PAA) and Institute for Health and Aging (CLE), University of California, San Francisco; The Lewin Group, Falls Church, VA (KL); and Lifelong Medical Care, Berkeley, CA (ML). Send correspondence and reprint requests to Liat Ayalon, Ph.D., School of Social Work, Bar Ilan University, Ramat Gan, 52900 Israel. e-mail: ayalonl@mail.biu.ac.il

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Older adults are more likely to seek mental health (MH) and substance abuse (SA) treatment in primary care clinics than in specialized mental health clinics.^{1,2} However, relative to whites, blacks are even less likely to seek outpatient specialty MH/SA treatment.³ Furthermore, blacks receive fewer MH sessions than whites,⁴ and are more likely to drop out of treatment early.⁵

Ethnicity in the United States serves as a crude marker of a variety of psychosocial factors that affect access to and participation in MH/SA care. Thus, barriers to MH/SA service use among ethnic minorities are both cultural and structural. Cultural barriers include lack of trust in mental health professionals,⁶ the stigma of mental illness,⁷ and spiritual or religious beliefs that may not be employed by the formal mental health system,⁸ whereas structural barriers include lack of transportation, scarcity of mental health resources, financial limitations,^{9,10} power-difference between mental health providers and consumers,¹¹ and potential racism on the side of providers.¹²

Though not specific to ethnic minorities, current efforts to engage older primary care patients in MH/SA treatment resulted in two alternative models of care: an enhanced referral model and an integrated model. The enhanced referral model employs active case management to minimize the waiting period for the first visit and to provide easy access to services as well as medical coverage. Specialty MH/SA clinics are selected based on their experience working with the elderly.^{13,14} In the integrated model of care, on the other hand, MH/SA services are located within the primary care clinic and are provided by MH professionals.¹⁵

A growing body of research has shown that relative to usual care, integrating MH/SA treatment into primary care clinics results in better access to services as well as better clinical outcomes^{15–17} in both white and ethnic minority depressed elderly.¹⁸ However, usual care may involve referral to specialty MH/SA clinics, treatment by primary care provider, or no treatment at all; thus, it is a less specific and weaker intervention than an enhanced referral model of care. Furthermore, to date, research on the participation of ethnic minorities in MH/SA services has targeted primarily depressed elderly and did not evaluate the effectiveness of an integrated model of care in ethnic minorities with a range of mental health conditions.

The present study evaluates potential structural barriers to service use among ethnic minority elderly with depression, anxiety, or drinking problems by comparing the use of MH/SA services in black and white elderly across two different models of service delivery: an enhanced referral model versus an integrated model. Based on past research, we expected that relative to the enhanced referral model, the integrated model of care would result in better access to and utilization of MH/SA services in both black and white older adults.

METHODS

Design

The Primary Care Research in Substance Abuse and Mental Health for the Elderly (PRISM-E) study is a randomized clinical trial designed to compare integrated versus enhanced referral models of MH/SA treatment for older adults with depression, anxiety, and/or problem drinking. For a detailed description of study design, see Levkoff et al.¹⁹

In the present study, we report data from 1 of 10 U.S. study sites, comparing engagement and participation rates in black and white elderly in the two modalities. This site was selected because of almost equal representations of black and white elderly.

Intervention

In the *integrated model*, MH/SA services were located in the primary care clinic and were provided by licensed mental health providers. This model involved ongoing communication between the MH/SA clinician and the primary care physician. The mental health treatment model advocated short-term supportive/case management approach, whereas patients with drinking problems were offered a manualized Brief Alcohol Intervention.²⁰

In the *enhanced referral model*, MH/SA services were provided in specialty mental health clinics, separated from the primary care clinic. Referral to the clinics took place within two to four weeks of the primary care physician appointment. MH/SA clinics agreed to comply with model requirements, including a short time period to first appointment and

coordinated follow-up contacts if the patient failed to make the first scheduled visit. They also provided assistance with transportation and finances. MH/SA evaluation and treatment were provided by licensed mental health professionals who primarily advocated the traditional long-term psychodynamic model of care.

Sample

A total of 631 primary care patients over the age of 65 (56% black, 33% white, 11% other) were screened for the presence of depression, anxiety or drinking problem at the University of California, San Francisco (UCSF) site. Patients were eligible to participate in the study if they were over the age of 65 years and were diagnosed with depression, anxiety, and/or drinking problem as assessed by the Mini-International Neuropsychiatric Interview (MINI),²¹ Center for Epidemiological Studies Depression Scale (CES-D),²² Beck Anxiety Inventory (BAI),²³ and an alcohol quantity/frequency scale. Exclusion criteria included the presence of severe cognitive impairment (as assessed by the Brief Orientation Memory Concentration Test),²⁴ probable diagnosis of mania, hypomania, or psychosis (as assessed by the MINI), or MH/SA treatment within the past three months. For a detailed description of the screening procedure and eligibility criteria, see Bartels et al.¹⁶ A total of 183 elderly (49% black, 35% white, 16% other) were enrolled in the UCSF study site. Because of the limited size of the other category, the present analysis focuses only on the black and white samples. See Figure 1 for a detailed description of participants' flow.

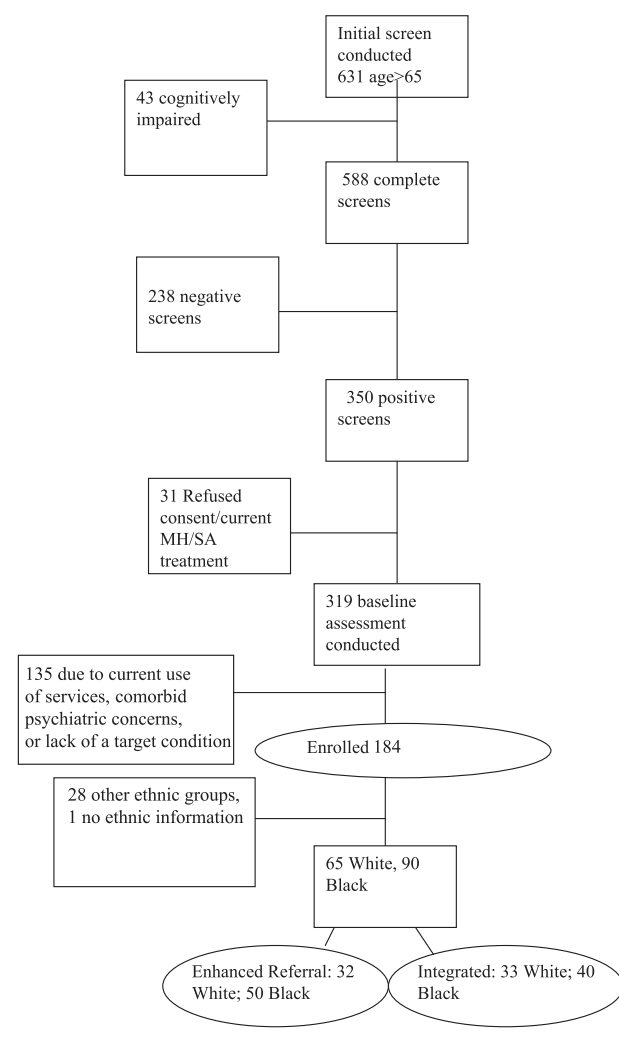
Predictors

We determined ethnicity based on participants' self-report (black = 0; white = 1). Treatment was randomly assigned (enhanced referral = 0; integrated = 1).

Outcome Variables

We evaluated the following outcome variables: whether a participant had at least one MH/SA visit within the six-month follow up period of this study, total number of visits, and time between baseline assessment and attendance of first MH/SA visit. This information was recorded by the clinician or by the research assistant at the treatment site.

FIGURE 1. Participants' Flow in the UCSF Study Site



Potential Covariates

We assessed age, sex, education, marital status, financial status, the Short Form (SF)-36,²⁵ a medical history checklist, psychiatric diagnoses, and prior MH/SA service use as potential covariates.

Statistical Analysis

Identifying Covariates. We identified potential covariates that differentiate the two ethnic groups by conducting *t*-test analyses for interval variables and χ^2 analyses for categorical variables. All variables significant at 0.05 were entered into the model as control variables. In all multivariate analyses, we

also controlled for gender and for overall distress level by using the mental component of the SF-36.

Multivariate Analyses. For the dichotomous outcome variable, *having at least one MH/SA visit*, a logistic regression was conducted with ethnicity, treatment assignment, and the interaction between the two, controlling for all covariates. The intervention effect within each ethnic group was then assessed.

For *overall number of visits*, we considered only those who had two or more MH/SA visits, as an indication of minimal engagement. Because this outcome variable was positively skewed and widely dispersed, we used a negative binomial regression model. We entered ethnicity, treatment assignment, and the interaction between the two, controlling for all covariates. We then evaluated ethnic group differences in number of visits within each treatment arm. For this outcome variable, overall number of visits, there was no reason to compare the intervention effect within each ethnic group, because of differences in the theoretical orientation of the two models: the integrated model of care advocated short-term treatment, whereas the enhanced referral model advocated long-term treatment.

To evaluate the intervention effect with regard to *time between baseline evaluation to first MH/SA visit*, we first evaluated the proportionality assumption and then used Cox regression analysis. We entered eth-

nicity, treatment assignment, and the interaction between the two, controlling for all covariates and stratifying the sample by level of education, because level of education did not comply with the proportional assumption. We then evaluated the intervention effect for each ethnic group.

RESULTS

Demographic and clinical characteristics of the sample are described in Table 1. Eighty-two participants (60% black) were assigned to the enhanced referral arm and 73 (54% black) were assigned to the integrated treatment arm. There were no statistically significant differences between the enhanced referral and the integrated models of care within each ethnic group. However, statistically significant differences between the white and the black samples were evident, with the white sample being significantly older ($t(153) = 2.34$, $p = 0.02$) and more educated ($t(151) = 10.57$, $p < 0.0001$).

All analyses were adjusted for baseline demographic variables that significantly differed between the two ethnic groups (age and education) and for sex and overall level of distress, as assessed by the mental component score of the SF-36. There was no

TABLE 1. Demographic and Clinical Characteristics of the Sample

	White					Black				
	Referral	Integrated	t/χ^2 Value	df	p Value	Referral	Integrated	t/χ^2 Value	df	p Value
N	32	33				50	40			
Female	22 (68.8)	16 (48.5)	2.74	1	0.09	37 (74)	24 (60)	1.99	1	0.15
Age, mean years (SD)	78.3 (7.9)	74.9 (8.0)	-1.72	63	0.09	73.9 (8.6)	73.1 (6.8)	-0.48	88	0.62
Married or living with partner	6 (18.7)	7 (21.2)	8.39	4	0.07	5 (10)	5 (12.5)	4.11	4	0.39
Less than 8th grade education	1 (3)	1 (3)	3.98	5	0.55	16 (32)	6 (15)	6.50	4	0.16
"Cannot make ends meet"	3 (9.4)	5 (15.2)	4.63	2	0.09	7 (14.6)	7 (17.5)	0.45	2	0.79
Chronic diseases, mean (SD)	4.3 (2.3)	4.5 (2.7)	0.41	63	0.67	4.4 (2.2)	5.0 (2.6)	1.07	88	0.62
Physical impairment, mean (SD)	36.6 (10.2)	39.0 (12.3)	0.85	63	0.39	35.8 (9.8)	33.5 (8.8)	-1.14	85	0.25
Mental distress, mean (SD)	45.5 (9.9)	42.6 (10.2)	-1.15	63	0.25	44.6 (10.6)	45.8 (13.2)	0.46	85	0.64
Depression disorder	25 (78.1)	25 (75.8)	4.32	4	0.36	43 (86)	34 (85)	0.16	4	0.99
Anxiety disorder	9 (28.1)	10 (30.3)	0.06	2	0.97	17 (34)	11 (27.5)	2.84	3	0.41
Drinking problem	10 (31.2)	7 (21.2)	1.56	2	0.45	8 (16)	9 (22.5)	0.61	1	0.43
Mental health services in the past 3 months	3 (9.4)	1 (3.1)	1.06	1	0.30	2 (4.3)	0 (0)	1.74	1	0.18
Substance abuse services in the past 3 months	1 (3.1)	0 (0)	1.04	1	0.30	0 (0)	2 (5)	2.45	1	0.17
Self-help services in the past 3 months	1 (3.2)	3 (9.4)	1.00	1	0.31	1 (2.1)	1 (2.5)	0.017	1	0.89

Notes: Data are n (%) unless indicated otherwise. *t*-Test analyses were conducted for continuous variables and χ^2 analyses for categorical variables.

TABLE 2. Engagement in Mental Health/Substance Abuse Services in the Integrated Versus Enhanced Referral Arm

	Having at Least One MH/SA Visit ^a		Unadjusted					Adjusted for Age, Education, Sex, and Distress				
	Integrated (%)	Referral (%)	OR	95% CI	Wald χ^2	df	p Value	OR	95% CI	Wald χ^2	df	p Value
White	22 (66.7)	15 (46.9)	2.26	0.83–6.17	2.56	1	0.11	2.98	0.98–9.06	3.72	1	0.05
Black	31 (77.5)	11 (22)	12.21	4.49–33.17	24.10	1	<0.0001	14.13	4.76–41.95	22.75	1	<0.0001

^aLogistic regressions were performed to evaluate engagement in MH/SA within both ethnic groups.

evidence of multicollinearity between these variables.

HAVING AT LEAST ONE MH/SA VISIT

After adjusting for all covariates, the interaction between ethnicity and model of care was significant (odds ratio [OR]: 0.21, confidence interval [CI]: 0.046–0.96, Wald χ^2 : 4.02, df = 1, p = 0.04). Results indicated that black elderly in the integrated arm were significantly more likely to have at least one MH/SA visit (77.5%) than blacks in the enhanced referral arm (22%). There was no statistically significant difference between white elderly in the integrated model of care (66.6%) and whites in the enhanced referral model of care (46.8%; Table 2).

OVERALL NUMBER OF MH/SA VISITS

In predicting overall number of visits, controlling for all covariates, we found a significant interaction between ethnicity and treatment assignment (incident rate ratio [IRR]: 0.20; CI: 0.06–61, Wald χ^2 : 8.00, df = 1, p = 0.005). We then compared the two ethnic groups within each treatment arm because the two models of care advocate different lengths of treatment. In the enhanced referral arm, Blacks had a

significantly smaller number of overall MH/SA visits (mean [SD]: 2.08 [5.28]) relative to whites (mean [SD]: 5.31 [7.86]). There was no statistically significant difference between blacks in the integrated arm (mean [SD]: 3.25 [3.71]) and whites in the integrated arm (mean [SD]: 2.75 [4.29]; Table 3).

TIME TO FIRST MH/SA VISIT

Controlling for all covariates and stratifying by level of education, we used Cox regression analysis to assess time between baseline evaluation to first MH/SA visit. The interaction between ethnicity and treatment assignment was statistically significant (hazard ratio [HR]: 0.31; CI: 0.11–0.89, Wald χ^2 : 4.66, df = 1, p = 0.03). However, time from baseline evaluation to engagement in first MH/SA visit was significantly shorter in the integrated arm for both blacks (mean days [SD]: 31.06 [28.66]) and whites (mean days [SD]: 22.18 [33.88]) relative to blacks and whites in the enhanced referral arm (mean days [SD]: 62.45 [43.57]; mean days [SD]: 63.46 [32.31]; Table 4).

DISCUSSION

This study is unique because it evaluates ethnic minority engagement and participation in integrated

TABLE 3. Overall Number of Mental Health/Substance Abuse Visits

	Overall Number of MH/ SA Visits, Mean (SD) ^a		Unadjusted					Adjusted for Age, Education, Sex, and Distress				
	White	Black	IRR	95% CI	Wald χ^2	df	p Value	IRR	95% CI	Wald χ^2	df	p Value
Integrated	2.75 (4.29)	3.22 (3.71)	0.57	0.29–1.14	2.48	1	0.11	0.58	0.25–1.33	1.64	1	0.20
Referral	5.31 (7.76)	2.08 (5.28)	2.66	1.22–5.79	6.12	1	0.01	2.87	1.06–7.73	4.37	1	0.03

^aNegative binomial regression analyses were conducted to evaluate overall number of MH/SA visits within each treatment arm.

TABLE 4. Time to First Mental Health/Substance Abuse Visit

	Time to First MH/SA Visit, Mean Days (SD) ^a		Unadjusted					Adjusted for Age, Education, Sex, and Distress				
	Integrated	Referral	HR	95% CI	Wald χ^2	df	p Value	HR	95% CI	Wald χ^2	df	p Value
White	22.18 (33.88)	63.46 (32.41)	2.45	1.27–4.74	7.15	1	0.007	2.48	1.20–5.13	6.02	1	0.01
Black	31.06 (28.66)	62.45 (43.53)	6.41	3.20–12.82	27.63	1	<0.0001	7.82	3.65–16.75	28.02	1	<0.0001

^aCox regression models were conducted to evaluate time to first MH/SA treatment within each ethnic group.

MH/SA services against a strong alternative, an enhanced referral model of care that actively encourages participation in MH/SA services. Results are encouraging and suggest that the integration of MH/SA treatment into primary care clinics results in better access to and greater use of MH/SA services among black elderly, even in comparison to a strong alternative such as the enhanced referral model. Our findings indicate that the integrated model of care is particularly effective in engaging black elderly in MH/SA treatment, even more so than in engaging white elderly. These findings add to a growing body of research that has shown that the integration of MH services into primary care results in better access to MH services and even better clinical outcomes for both white and ethnic minority younger as well as older adults.^{18,26} Research has shown that relative to whites, blacks often face instrumental barriers in access to care in addition to distrust in formal services.^{4,7,8} Thus, proximity to primary care, as well as the capitalization on already-established trust in and familiarity of primary care providers and settings, could explain our findings.

Although both black and white elderly were more likely to have at least one MH/SA visit in the integrated model of care than in the enhanced referral model of care, differences between the two models were more striking for blacks. Furthermore, while in the integrated arm, there were no ethnic group differences in number of visits; in the enhanced referral arm, blacks had a significantly lower number of MH/SA visits than whites. This suggests the possibility that disparities in access to services between blacks and whites are maintained in the enhanced referral model, but not in the integrated model of care.

Despite these encouraging findings, it is important to note that both models of care resulted in a small number of overall visits, with a mean number of visits ranging from 2.0 (for blacks in the enhanced referral

arm) to 5.3 (for whites in the enhanced referral arm), and a relative long waiting period before the first MH/SA visit (ranging from 22 to 63 days depending on model of care). While these findings call for the improvement of MH/SA delivery system for both ethnic groups, results are particularly disconcerting for blacks in the enhanced referral model of care, of whom 78% made no MH/SA visit during the six months period of the study, despite a documented need and intensive efforts to bring them into treatment.

Although promising, this study has several limitations. First, this study did not attempt to identify specific cultural factors that may account for differences between the two groups. The striking results call for additional investigation of cultural factors that might explain the findings. Second, although participants were randomized into the two treatment arms, they were not stratified by ethnicity. Additionally, this study is a post-hoc subanalysis of site-specific data from a multisite study.

To sum, although preliminary, results suggest that integrating MH/SA services into primary care clinics is particularly effective in engaging black elderly in MH/SA services. Despite these encouraging findings, the rates of participation in MH/SA services in both ethnic groups remained low even in the integrated arm. Thus, further research is needed to identify systems of care that do not only engage older adults in MH/SA services, but also increase their participation in MH/SA services.

APPENDIX

PRISME Study Investigators

Carolyn Aoyama, Patricia Arean, Steve Bartels, Hongtu Chen, Henry Chung, Marisu Cody, Giuseppe

Constantino, U. Nalla B. Durai, Carroll Estes, Susan Cooley, Jack Fitzpatrick, Brian Goodman, Trevor Handley, Tim Howell, Ira Katz, Joanne Kirchner, Dean Krabn, Sue Levkoff, Karen Linkins, Maria Llorente, Jim Maxwell, Keith Miles, Robert Molokie, Jack McLntyre, Betsy McDonnald Herr, Mike Nazar, Ed Olsen, David Oslin, Tom Oxman, Andy Pomerantz, Louise Quijano, Melissa Rael, Pat Sabry, Bill

Van Stone, Heidi Syropoulos, Paul Woblford, Cynthia Zubritsky.

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