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Improving Health-Related Quality of Life in Older African-Americans and non-Latino Whites

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Abstract

Objective—To compare the effect of problem solving therapy against a health-promotion intervention (dietary practices) on health-related quality of life (HRQOL) and examine if there is a differential effect on non-Latino Whites and African-Americans between the two interventions. This paper also explores participant characteristics (problem solving style and physical functioning) as potential predictors of HRQOL.

Methods—Secondary analysis of data from a randomized depression prevention trial involving 247 older adults (154 non-Latino Whites, 90 African-Americans, 3 Asians). Participants were randomly assigned to receive either problem solving therapy for primary care (PST-PC) or coaching in healthy dietary practices (DIET).

Results—Both PST-PC and DIET improved HRQOL over two years and did not differ significantly from each other. African-Americans in both conditions had greater improvements in mental health-related quality of life (MHRQOL) compared to non-Latino Whites. In addition, higher social problem solving and physical functioning were predictive of improved MHRQOL.

Conclusions—PST-PC and DIET have the potential to improve health-related quality of life in a culturally relevant manner. Both hold promise as effective and potentially scalable interventions that could be generalized to highly disadvantaged populations in which little attention to HRQOL has been paid.

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Keywords

African-Americans; health-related quality of life; problem solving therapy; older adults; health promotion

INTRODUCTION

The mental health needs of older adults are especially complex due to co-occurring physical health problems¹⁻³ that contribute to compromised health-related quality of life (HRQOL). HRQOL has been defined as an individual's perception of physical and mental health.⁴ This multidimensional construct is viewed as a critical indicator of health because it focuses on the person's self-perceptions of his/her health, which is beneficial in lowering distress and enhancing well-being.⁴⁻⁶ Evaluating and tracking HRQOL in high-risk populations can help to identify subgroups at increased risk of poor physical or mental health and inform the development of effective health-promotion and disease-prevention interventions.⁷

Depressive and anxiety disorders can have a significant impact on HRQOL in old age. Late-life depression is associated with a wide array of adverse consequences, including psychological suffering, functional impairment, and increased mortality rates.⁸⁻¹⁰ Similarly, late-life anxiety is associated with significant impairment in social, family, and occupational functioning, poor perceived emotional and physical health, well-being, and low satisfaction with daily life.^{11,12}

Given the subjective nature of HRQOL, psychological factors are likely to impact the cognitive processes involved in such reports. Therefore, psychological interventions could have a positive influence on overall HRQOL. Problem solving therapy (PST) is an evidenced-based intervention that teaches depressed patients the problem solving skills necessary to manage day-to-day problems.¹³ In addition to treating mental illness effectively in late-life,¹³ PST has sufficient flexibility to address multiple domains of HRQOL such as disability¹⁴ and chronic medical illness.¹⁵ However, as suggested below, it is not yet clear that PST represents an optimal approach to address HRQOL in older African-Americans.

Race adds to variation observed in the prevalence and impact of both physical and mental illness in older adults. Older non-Latino Whites have significantly higher lifetime prevalence of depression and anxiety than African-Americans, but 12-month rates are similar across the two groups.^{3,16} In contrast, the prevalence of heart disease, stroke, cancer, and diabetes is significantly higher in older African-Americans than in older non-Latino Whites.¹⁷ Taken together, disparities in mental and physical health put older African-Americans at greater risk of having poorer overall HRQOL than non-Latino Whites.¹⁸ Although many studies have examined factors associated with HRQOL, the impact of mental health and health promotion interventions on HRQOL has not been fully investigated.

There is growing evidence to suggest that health-promoting behaviors can lead to improved mental and physical health outcomes.¹⁹ Health-promoting behaviors, defined as those activities in which individuals engage to maintain or improve their well-being (e.g. getting

adequate nutrition), have been shown to improve HRQOL⁴ and are needed for vulnerable, disadvantaged populations.²⁰ Older African-Americans have expressed a distrust of conventional mental health professionals as a result of perceived mistreatment by mental health providers and institutions.²¹ Given that older African-Americans have low rates of mental health service use,²² experience high stigma,²³ and have high rates of comorbidities,¹⁷ health promotion interventions may be a culturally acceptable alternative that could potentially impact HRQOL.

In this study, we did not have a specific hypothesis for several reasons. First, the dearth of randomized, health-related quality of life trials in older adults raises the question of which intervention to use. Second, the multicomponent nature of health-related quality of life makes hypothesizing difficult. Since PST has shown to be an effective mental health treatment in older adults with multiple comorbid physical conditions, it could have a greater impact on health-related quality of life compared to DIET. However, health promotion interventions have value in their own right, and African-Americans could prefer health promotion interventions over a traditional psychotherapeutic approach such as PST. Therefore, DIET could have a greater impact on health-related quality of life than PST among African-Americans. The goals of the current study were three-fold: First was to compare the effect of PST to a health promotion intervention which coaches individuals in healthy dietary practices (DIET) on HRQOL. Second was to examine whether there was a race effect on HRQOL between PST and DIET. The third aim, which was exploratory, was to explore participant characteristics (e.g. problem solving style and functional impairment) as potential predictors of HRQOL.

METHODS

Participants

All participants were subjects in a National Institute of Minority Health and Health Disparities (NIMHD) and National Institute of Mental Health (NIMH) sponsored trial to determine the ability of PST vs. DIET to prevent or delay episodes of major depression in individuals with subsyndromal depression. A detailed description of the study methods is provided elsewhere.²⁴ A total of 247 participants (154 non-Latino Whites, 90 African-Americans, and 3 Asians) were enrolled in the parent randomized, mental illness prevention trial.²⁴ Older adults who are already symptomatic are at increased risk for developing major depression.²⁵ Therefore, only mildly symptomatic individuals were recruited in order to maximize the efficiency of the depression prevention trial. Eligible participants were 50+ years of age and met criteria for subsyndromal depression as defined by a score of 11 or greater on the Center for Epidemiologic Studies Depression Scale,²⁶ and absence of a major depressive episode during the previous year. Excluded from study participation were individuals with a Mini-Mental State Score²⁷ less than 24 (to exclude probable dementia) and a history of an episode of alcohol or other substance use disorder within the past 12 months, bipolar disorder, other psychotic disorder, or neurodegenerative disorder based on the Structured Clinical Interview for DSM-IV Disorders.²⁸ Participants were recruited through multiple referral sources (e.g. community agencies, primary care, print and electronic media, etc.). For the purposes of this secondary study, the 3 Asian participants

were only included in the analyses comparing the effect of PST with DIET on HRQOL over time. They were excluded from all subsequent analyses when examining the differential effect of race between the two interventions.

Randomization

The parent study randomly assigned participants to one of two interventions using permuted-block randomization stratified by the presence/absence of a history of major depressive disorder (MDD) and by site of recruitment. This stratified randomized design was done for three reasons. First, a past history of MDD is a strong risk factor for future episodes. Second, there were differences in sociodemographic characteristics of participants (including race) recruited from each type of site. Third, there was the possibility that recruitment site could influence rates of occurrence of MDD. Random assignment was communicated by the statistician to the project co-coordinator but concealed from independent evaluators. There were no instances of the blind being inadvertently broken.

Interventions

The experimental group received manualized problem solving therapy for primary care (PST-PC).²⁹ The first session lasted an hour and the subsequent sessions lasted 30 minutes each. Participants in DIET received coaching in healthy eating practices. Using a manualized educational intervention, interventionists reviewed general nutrition guidelines, helped with preparing weekly menus and grocery lists, and reviewed food intake since last visit. Topics discussed included access to healthy food, culturally specific and acceptable foods, and specific topics raised by participants. DIET is a culturally acceptable, active intervention that facilitated recruitment of African-American participants.

PST-PC and DIET had similar numbers of sessions (6–8 sessions) and semi-annual boosters (30–45 minutes at 3, 9, and 15 months). Both interventions included homework assignments, monitoring of adherence, and focused on concerns identified by each participant. Both were provided by interventionists trained at the NIMH-sponsored Advanced Center for Late Life Depression Prevention and Treatment at University of Pittsburgh School of Medicine and Graduate School of Public Health. Interventionists were six white social workers and mental health nurses. The same interventionists delivered both PST-PC and DIET, to avoid confounding intervention with clinician effects.

To ensure fidelity of intervention delivery, we used group supervision and one-on-one feedback using evaluations of randomly selected 20% of audiotapes of PST-PC and DIET sessions. PST-PC adherence ratings assessing quality were completed by the intervention supervisor, using two sessions for each case — an early session (1–3) and a later session (4–8). Following a batch of ratings, corrective feedback was provided. A majority (73%) of sessions of both PST-PC and DIET was rated as adherent. A treatment fidelity scale was also developed to document the absence of intervention contamination effects. Using this scale, ratings were completed on seven consecutive minutes of the session starting five minutes into the session. Sessions were rated independently by two raters for the presence of PST-PC elements and DIET elements. Based upon blind ratings, the two interventions were highly discriminable ($\kappa=.91$), even though delivered by the same interventionists.

Interventions were delivered primarily face to face in settings requested by the participants themselves: primary care offices, community agencies, and participant homes. About 9% (n=173/1884) of sessions were delivered over the telephone. The protocol was overseen by a Data Safety Monitoring Board and reviewed and approved annually by the University of Pittsburgh's Institutional Review Board.

Measures

The primary outcome of this analysis was HRQOL – measured by the 12-item Short Form Health Survey (SF-12)³⁰ – administered by independent evaluators blind to randomized intervention assignment at baseline, and every 6 months subsequently until 24 months. The secondary outcomes of this study were problem solving skills – measured by the Social Problem Solving Inventory³¹ – and functional impairment – measured by the Late-Life Function and Disability Instrument.³²

Short Form Health Survey (SF-12)—The SF-12 is a widely used measure of HRQOL that describes general physical health status and mental health distress.³⁰ The utility of the SF-12 as a HRQOL instrument stems from its brevity and ability to explain ~90% of the variance in the extensively validated SF-36.³⁰ The 12 items in the questionnaire correspond to eight principal physical and mental health domains including general health perceptions; physical functioning; role limitations due to physical and emotional problems; bodily pain; energy-fatigue, social functioning and mental health. The 12 items are summarized into two scores, a Physical Health –Related Quality of Life score and a Mental Health-Related Quality of Life score. These provide an important contrast between physical and psychological health status.

Social Problem Solving Inventory—The Social Problem Solving Inventory (SPSI)³¹ provides a broad assessment of two different problem-orientation dimensions and three different problem-solving core behavior dimensions. The five scales are positive problem orientation (PPO), negative problem orientation (NPO), rational problem solving (RPS), impulsivity/carelessness style (ICS), and avoidance style (AS). The PPO scale assesses an individual's tendency to view problems in a positive light; to see problems as challenges rather than threats; and the ability to detect and implement effective solutions. The NPO scale assesses maladaptive problem-solving approaches. The RPS scale assesses an individual's tendency to use effective problem solving techniques. The ICS scale evaluates a tendency to solve problems by making impulsive, incomplete, and haphazard decisions. The AS scale measures maladaptive patterns of problem solving such as putting the problem off and waiting for problems to resolve themselves.³¹

Late-Life Function and Disability Instrument—The Late-Life Function & Disability Instrument (Late-Life FDI)³² is a 48-item measure that assesses and responds to meaningful change in two distinct outcomes: function – a person's ability to do discrete actions or activities (“can do”), and disability – a person's performance of socially defined life tasks (“does do”). It was designed to examine the impact of treatment and interventions that aim to improve function and minimize disability in older adults.

Data Analysis

All analyses were performed using the intent-to-treat principle, with comparisons made according to the assigned intervention groups. All data were examined for normality prior to analyses and transformations were used where necessary. Baseline demographics and clinical differences between interventions and between races were tested using t-tests for continuous variables and chi-square for categorical. To characterize and compare the trajectories between PST-PC and DIET, mixed models were used with intervention, time and the potential interactions among intervention and time. Models first considered both linear and quadratic time effects in order to test for nonlinear trajectories and then linear time effects only. Best fit model was determined comparing Bayesian Information Criterion (BIC) values between models. If there was a significant baseline difference between interventions, the baseline value was used as a covariate and change over time was modeled in the remaining time points. In analyses examining race as moderator, race and the interactions among race and other variables were included in the above models. If there were baseline race differences, then baseline value was again used as covariate, and change was modeled over the remaining time points. SPSI³¹ and Late-Life FDI³² measures were examined as time-varying covariates in the mixed model to examine predictors of HRQOL.

RESULTS

Sociodemographic Characteristics

Table 1 shows baseline sociodemographic and clinical characteristics of participants who were randomized to either PST-PC or DIET. The groups did not differ significantly on any demographic and clinical variables. Table 2 shows the baseline sociodemographic and clinical measures of non-Latino White and African-American participants. African-Americans reported greater social and medical disadvantage, such as having significantly fewer years of formal education, lower household income, greater rate of obesity, and lower physical health-related quality of life. African-American and non-Latino White participants were similar on the SPSI³¹ with the one exception of a higher positive problem orientation (a measure of active coping and resilience) among African-Americans. No race differences were observed in functional impairment.

Mental Health-Related Quality of Life

Participants in both PST-PC and DIET demonstrated similar improvement in mental health-related quality of life (MHRQOL). There were significant quadratic and linear time effects. There were no significant intervention or intervention by time. When examining race as moderator, a trend in baseline difference in African-Americans between interventions was observed; thus, the model co-varied for baseline score and the change over remaining time points was examined. There was a significant time by race effect with African-Americans increasing to a greater extent over time relative to non-Latino Whites for post-intervention through 2 years, but no significant intervention or intervention by time effects, nor race, or race by intervention effects (Figure 1 shows raw mean \pm standard error). African-Americans improved by approximately 3.5 points between 6 months and 2 years. This represents nearly an 8% improvement from the 6 month scores. Non-Latino Whites, on average, showed no improvement (<1% change from 6 month score).

Physical Health-Related Quality of Life

Participants in both PST-PC and DIET demonstrated similar improvement in physical health-related quality of life (PHRQOL). There were significant quadratic and linear time effects. There were no intervention or intervention by time effects. When examining race as moderator, baseline difference in non-Latino Whites and African-Americans were observed; therefore, the model co-varying for baseline score was run. No significant time effects for post-intervention through 2 years and no significant intervention or intervention by time effects, nor race, race by intervention, race by time effects were detected (Figure 2 shows raw mean \pm standard error).

Exploratory Analyses: Factors Associated with Improved HRQOL

Table 3 shows the results of our exploratory analyses to identify potential predictors of HRQOL. Better scores on both the Social Problem Solving Inventory (SPSI)³¹ and the Late-Life Function & Disability Instrument (Late-Life FDI)³² predicted better MHRQOL scores. Higher positive problem orientation (PPO) and rational problem solving (RPS) scores were associated with increased MHRQOL. Conversely, higher negative problem orientation (NPO), impulsivity/carelessness style (ICS), and avoidance style (AS) scores were associated with decreased MHRQOL (data not shown but available upon request). Higher scores on the Late-Life FDI functioning scale were associated with improved mental and physical health-related quality of life.

DISCUSSION

The results of this study indicate that both PST-PC and DIET are associated with improved HRQOL for older non-Latino Whites and African-Americans over two years. There were no significant differences found between the two interventions with respect to improving HRQOL. Despite the greater burden of social and medical disadvantages, African-Americans had greater improvements on MHRQOL compared to non-Latino Whites. Mental health interventions for the evidence-based management of depression have been found to have moderate effect sizes (~ 0.35), which corresponds to meaningful differences in response and remission rates.^{33,34} This is the magnitude of the effect observed in the current study. Thus, the results of this study are consistent with other treatment-oriented studies, but now in the context of MHRQOL. In addition, improvements in positive problem solving skills and physical functioning were identified as factors predicting improved MHRQOL. Given the lack of studies testing intervention effects on racial/ethnic minority elderly, this study presents a novel contribution to the HRQOL literature.

The finding that both PST-PC and DIET had comparable and sustained improvements in HRQOL over time is consistent with prior research.³⁵ This study builds upon that previous study by showing long term benefits – 2 years post compared to 1 year – and a much more active health promotion comparison condition – 6–8 30-minute sessions compared to three, 30-minute videos. These results combined with the exploratory finding that improvements in positive problem orientation and physical functioning are associated with increased MHRQOL highlight the potential impact that learning-based, skills-enhancing interventions can have on older adults who tend to have high rates of comorbidities. Teaching coping skills

may improve HRQOL by enhancing resilience to stress, anxiety and diminishing the sense of loss of control at the core of depression. Similarly, teaching health promotion strategies for better nutrition may improve HRQOL by enhancing the ability to tackle problems associated with managing health issues.^{24,34} Thus, there may be a synergy between PST and health promotion approaches in improving HRQOL.

Educational and behavioral intervention programs, like DIET, enhance general well-being and bring mental health benefits to older adults faced with health-related challenges.⁷ This may help explain why there was a significant improvement in the MHRQOL of older African-Americans compared to older non-Latino Whites. To maximize the effectiveness of health promotion strategies, the intervention must be relevant, respectful, and specific to this population.³⁶ Given that obesity is more prevalent in older African-Americans than in older non-Latino Whites,³⁷ an intervention designed to coach older adults in healthy dietary practices could be seen as a culturally acceptable and salient health promotion strategy in older African-Americans that could potentially impact HRQOL. Participants in DIET were given the tools necessary to address the challenges of implementing healthy dietary practices and to tackle problems that may arise when managing health issues. It was a non-stigmatizing approach that addressed a problem in the African-American community in a way that optimized their problem solving style.

Despite a well-documented distrust of conventional mental health professionals²¹ and stigma concerning mental illness,²³ African-Americans enrolled in PST-PC exhibited greater improvements in MHRQOL compared to non-Latino Whites in PST-PC. Behavioral activation and developing active coping strategies are important components of PST. This form of psychotherapy may seem less stigmatizing and culturally relevant since it matches and enhances African-American's ability to detect and implement effective solutions to problems encountered in everyday life.

Caution is warranted in interpreting our results due to limitations associated with the sample, study methods, and design. First, the study design did not include a "usual care" or no-intervention control condition. The lack of a no-intervention control condition was a pragmatic decision reflecting the unfortunate reality that "usual care" is often "no care" or "poor care," especially for racial/ethnic minorities.²⁴ The community advisory board at the University of Pittsburgh warned that it would be a barrier to participation for many African-Americans. Since a no-intervention control was not included in the design of the study, the possibility of a regression to the mean or a non-specific effect of study participation cannot be excluded. Second, repeated assessments could have led to reported symptom attenuation. Participants tend to report fewer symptoms upon retesting to avoid further questions or by learning more about the purpose of the interview.³⁸ Third, participants had all consented to be in a study in which they were willing to be randomized to either a mental health treatment intervention or a health promotion intervention. These individuals represent a select subgroup, and conclusions drawn may not be generalizable to the population at large.

While these results should be viewed with some caution, they suggest potential directions for further inquiry. Adding a no-intervention control condition would help to clarify the question of whether the findings were a result of the interventions used or a regression to the

mean. Incorporating Latino and Asian elderly would address the paucity of research examining HRQOL in older, high-risk, highly disadvantaged populations. Older Latinos have high prevalence of anxiety and depression¹⁶ and high mental health service use disparities.²² Older Asians also report high stigma³⁹ and believe that mental illness is a result of medical illness.⁴⁰ Thus, health promotion interventions could have a great impact on HRQOL in these communities.

This study provides preliminary findings that may help to inform the use of interventions aimed at improving HRQOL in racial/ethnic minority older adults with subsyndromal depression. Mental health services provided to African-Americans may include problem solving techniques or alternatively apply culturally relevant health promotion interventions that target salient health problems (e.g. obesity) as an approach to engage older African-Americans in mental health services. Such targeted health promotion interventions might be considered for other disadvantaged populations in implementing culturally acceptable psychosocial interventions with the potential to positively impact HRQOL.

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Mental Health-Related Quality of Life

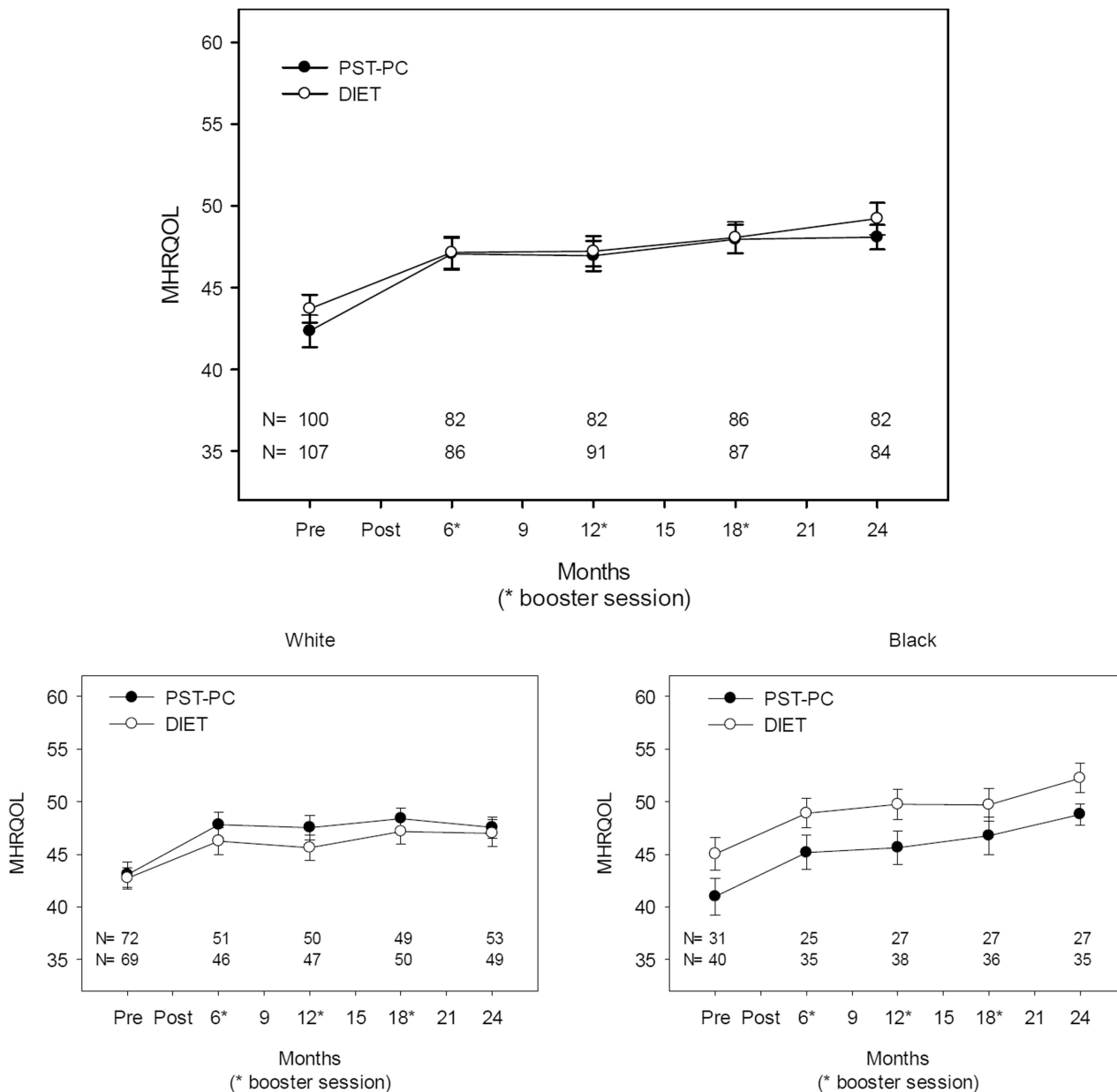


Figure 1. Mental Health-Related Quality of Life (PST versus DIET; African-Americans versus non-Latino Whites) Mental Health-Related Quality of Life

Physical Health-Related Quality of Life

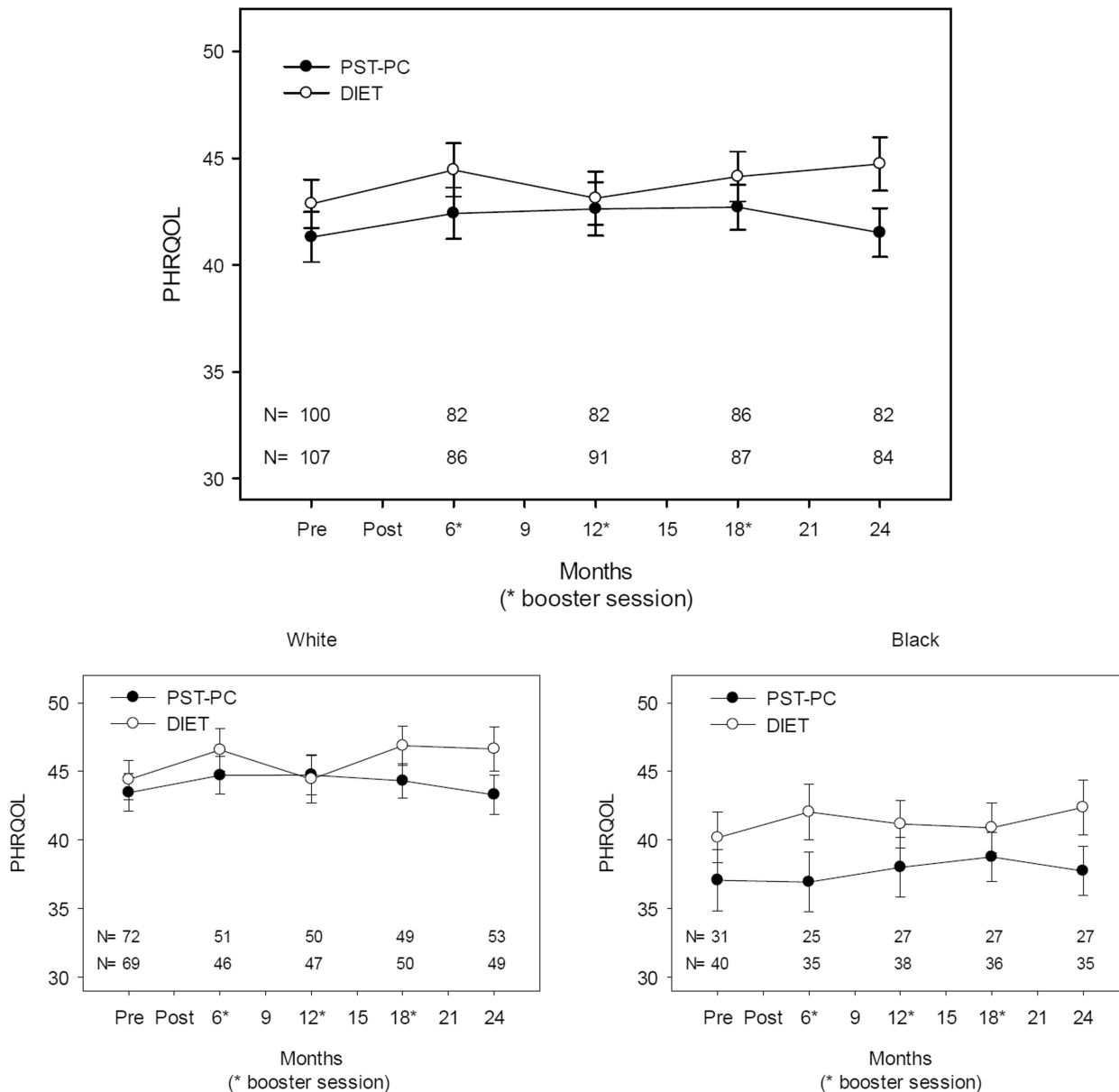


Figure 2. Physical Health-Related Quality of Life (PST versus DIET; African-Americans versus non-Latino Whites) Physical Health-Related Quality of Life

Table 1

Contrast of sociodemographic and clinical characteristics in PST-PC and DIET participants

	PST-PC N=125	DIET N=122	
Sociodemographics			
Age (years)	65.78 (10.94)	65.39 (10.99)	t(245)=0.28, p=0.78
%Female	68.80 (n=86)	73.77 (n=90)	c2 (1)=0.52, p=0.47
Race			Fisher Exact p=0.54
%ASIAN PACIFIC	1.60 (n=2)	0.82 (n=1)	
%AFRICAN-AMERICAN	33.60 (n=42)	39.34 (n=48)	
%NON-LATINO WHITE	64.80 (n=81)	59.84 (n=73)	
Education (years)	14.41 (2.84)	14.68 (2.65)	t(245)=-0.78, p=0.44
Marital Status			χ^2 (3)=1.68, p=0.64
%co-habiting/married	46.40 (n=58)	45.90 (n=56)	
%divorced/separated	16.80 (n=21)	22.13 (n=27)	
%never married	13.60 (n=17)	9.84 (n=12)	
%widowed	23.20 (n=29)	22.13 (n=27)	
%Employed	41.60 (n=52)	38.52 (n=47)	χ^2 (1)=0.13, p=0.72
Median Household Income	50509.8 (25786.5) [n=123] Range:10902.0-115882	45545.2 (21598.7) [n=120] Range:12818.0-127361	t(241)=1.62, p=0.11
Health			
Cumulative Illness Rating Scale (CIRSG) Total (scale range: 0-52)	7.69 (3.62) [n=124]	7.99 (4.16) [n=121]	t(243)=-0.60, p=0.55
Count (scale range=0-13)	4.88 (2.06) [n=124]	5.02 (2.38)	t(244)=-0.48, p=0.63
Heart + Vascular (scale range=0-8)	2.00 (1.49) [n=124]	1.89 (1.51)	t(244)=0.60, p=0.55
Body Mass Index (BMI) Total	30.54 (6.57)	30.61 (7.26) [n=120]	t(243)=-0.07, p=0.94
% 30	45.60 (n=57)	51.67 (n=62)	χ^2 (1)=0.68, p=0.41
HRQOL PHRQOL (t score: mean=50, std=10)	41.31 (11.77) [n=100]	42.87 (11.76) [n=107]	t(205)=0.95, p=0.34
MHRQOL (t score: mean=50, std=10)	42.35 (9.80) [n=100]	43.71 (8.98) [n=107]	t(205)=1.04, p=0.30
Cognitive Status Mini-Mental Status Examination (MMSE: scale range=0-30)	28.09 (1.74) [n=124]	28.38 (1.54)	t(244)=-1.38, p=0.17
Mental Health Hamilton Rating Scale for Depression (17 Items) (HRS17: scale range=0-52)	11.60 (4.03) [n=124]	10.79 (3.51)	t(244)=1.68, p=0.09
Center for Epidemiologic Studies Depression Scale (CESD: scale range=0-60)	21.89 (8.29) [n=124]	20.40 (7.47)	t(244)=1.48, p=0.14
Beck Depression Inventory (BDI:scale range=0-63))	11.08 (5.88) [n=117]	9.88 (5.51) [n=116]	t(231)=1.60, p=0.11
Brief Symptom Inventory Anxiety**	0.51 (0.47) [n=119]	0.52 (0.54) [n=116]	t(233)=-0.16, p=0.87

	PST-PC N=125	DIET N=122	
(scale range=0–4)			
% History of major depressive disorder	32.80 (n=41)	34.43 (n=42)	$\chi^2_{(1)}=0.02, p=0.89$
% History of anxiety disorder	21.60 (n=27)	20.49 (n=25)	$\chi^2_{(1)}=0.00, p=0.95$
% Current anxiety disorder	21.60 (n=27)	27.05 (n=33)	$\chi^2_{(1)}=0.72, p=0.40$
Social Problem Solving Inventory (SPSI) SPSI Total (standard score: mean=100, std=15)	99.79 (13.72) [n=105]	103.11 (12.97) [n=109]	$t(212)=-1.82, p=0.07$
Positive Problem Orientation (standard score: mean=100, std=15)	95.81 (16.42) [n=113]	99.75 (14.68) [n=116]	$t(227)=-1.92, p=0.06$
Referral Source Kingsley Center, Healthy Black Family Project, Healthy Hearts and Souls, Giant Eagle Screening, Barbershop	17.89 (n=22)	19.83 (n=24)	$\chi^2_{(5)}3.56, p=0.61$
Mental Health Specialist	4.07 (n=5)	4.13 (n=5)	
Primary Care	43.09 (n=53)	47.11 (n=57)	
Research (research program or registry)	10.57 (n=13)	9.92 (n=12)	
Self-referred (media, brochure, presentation, peer educator)	18.70 (n=23)	10.74 (n=13)	

Table 2

Baseline demographics and clinical characteristics of non-Latino White and African-American participants.

	Non-Latino Whites N=154	African-Americans N=90	
Sociodemographics			
Age (years)	65.49 (11.71)	65.83 (9.73)	t(242)=0.24, p=0.81
%Female	67.53 (n=104)	77.78 (n=70)	$\chi^2_{(1)}=2.44, p=0.12$
Education (years)	15.23 (n=2.78)	13.32 (2.21)	t(220.0*)=-5.89, p<0.0001
Marital Status			$\chi^2_{(1)}=21.74, p<0.001$
%co-habiting/married	57.14 (n=88)	27.78 (n=25)	
%divorced/separated	14.29 (n=22)	27.28 (n=25)	
%never married	7.79 (n=12)	17.78 (n=16)	
%widowed	20.78 (n=32)	26.67 (n=24)	
%Employed	46.10 (n=71)	30.00 (n=27)	$\chi^2_{(1)}=5.48, p=0.02$
Median Household Income	58,273 (23,210) n=151 range: 14,539 – 127,361	31,003 (13,137) n=89 range: 10,902– 79,100	t(237.7*)=-11.62, p<0.001
Health			
Cumulative Illness Rating Scale (CIRSG) Total (scale range: 0–52)	7.45 (3.78) n=152	8.42 (4.03)	t(240)=1.89, p=0.06
Count (scale range=0–13)	4.75 (2.21) n=153	5.22 (2.21)	t(241)=1.60, p=0.11
Heart + Vascular (scale range=0–8)	1.84 (1.52) n=153	2.11 (1.48)	t(241)=1.34, p=0.18
Body Mass Index (BMI) Total	29.14 (6.44) n=152	32.99 (7.04)	t(240)=4.34, p<0.001
% 30	39.47 (n=60)	63.33 (n=57)	$\chi^2_{(1)}=11.95, p<0.001$
% with Hypertension (systolic >=140 or diastolic >=90)	45.95 (n=68)	52.33 (n=45)	$\chi^2_{(1)}=0.65, p=0.42$
HRQOL PHRQOL (t score: mean=50, std=10)	43.92 (11.34) n=133	38.81 (12.04) n=71	t(202)=-3.00, p=0.003
MHRQOL (t score: mean=50, std=10)	42.89 (9.16) n=133	43.26 (9.91) n=71	t(202)=0.27, p=0.79
Mental Health			
Social Problem Solving Inventory (SPSI) SPSI Total (standard score: mean=100, std=15)	100.26 (13.43) n=137	103.72 (13.35) n=75	t(210)=1.80, p=0.07
Positive Problem Orientation (standard score: mean=100, std=15)	95.87 (15.23) n=142	100.94 (16.09) n=85	t(225)=2.38, p=0.02
Negative Problem Orientation (standard score: mean=100, std=15)	99.07 (14.56) n=137	97.41 (14.14) n=75	t(210)=-0.80, p=0.42
Rational Problem Orientation (standard score: mean=100, std=15)	96.75 (14.91) n=137	98.84 (15.64) n=75	t(210)=0.96, p=0.34
Impulsivity/Carelessness Problem Orientation (standard score: mean=100, std=15)	96.50 (13.23) n=137	94.44 (12.88) n=75	t(210)=-1.10, p=0.27
Avoidance Style (standard score: mean=100, std=15)	95.35 (13.02) n=137	92.35 (13.15) n=75	t(210)=-1.60, p=0.11

	Non-Latino Whites N=154	African- Americans N=90	
Late-Life Functional Disability Instrument (FDI) FDI Frequency Scaled Score	52.74 (6.66) n=118	51.61 (7.34) n=80	t(196)=-1.12, p=0.27
FDI Limitation Scaled Score	68.31 (12.60) n=118	65.54 (14.22) n=80	t(210)=-1.44, p=0.15

* Satterthwaite method used due to unequal variances.

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Table 3

Factors Predicting HRQOL

Mental Health Related Quality of Life Predictors¹	
	Beta (stderr)
Intercept	6.765 (3.999)
MHRQOL baseline	0.201 (0.045)
FDI Limit Scaled Score	0.198 (0.029)
SPSI Total	0.166 (0.032)
Race (African-American)	-2.025 (1.628)
Intervention(PST-PC)	0.239 (1.465)
Week	-0.002 (0.013)
Intervention(PST-PC)*Race(African-American)	-0.775 (1.784)
Week*Race(African-American)	0.042 (0.018)
Week*Intervention(PST-PC)	0.002 (0.017)
Physical Health Related Quality of Life Predictors²	
	Beta (stderr)
PHRQOL baseline	2.012 (4.105)
FDI Limit Scaled Score	0.612 (0.039)
SPSI Total	0.172 (0.029)
Race (African-American)	0.052 (0.032)
Intervention(PST-PC)	-3.039 (1.624)
Week	-0.321 (1.455)
Intervention(PST-PC)*Race(African-American)	-0.015 (0.013)
Week*Race(African)	1.052 (1.865)
Week*Intervention(PS-PC)	0.008 (0.017)

Note:

¹ **MHRQOL as outcome:** Due to baseline differences, model uses baseline MHRQOL as covariate and time is modeled using post treatment scores.

² **PHRQOL as outcome:** Due to baseline differences, model uses baseline PHRQOL as covariate and time is modeled using post treatment scores.