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Disability and Health in African Americans: Population Research and Implications for Occupational Therapy Community-Based Practice

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Disability and Health in African Americans: Population Research and Implications for Occupational Therapy Community-Based Practice

Abstract

Background: Population-based research and community-based interventions are integral to occupational therapy's scope of practice, yet they are underdeveloped in actual implementation. Therefore, this paper focuses on some health challenges facing the African American population, guided by the Person-Environment-Occupation-Performance Model.

Method: Using data from an observational cross-sectional nationwide telephone survey of African American adults, we examined differences between African Americans who are receiving disability payments (RDP) and those who are employed full time (FTE) on several physical health behaviors and psychosocial health indicators. We further compared the differences between African Americans RDP versus those FTE on those physical health behaviors and psychosocial health indicators across five US regions.

Results: Findings suggest that African Americans RDP are engaging in fewer positive physical health behaviors and experiencing worse psychosocial health compared to their counterparts FTE. There are also nuanced regional variations in the differences between African Americans RDP and FTE in physical health behaviors and psychosocial health indicators.

Conclusion: This research highlighted some health challenges of African Americans RDP and FTE using a regional lens, demonstrating the value of OT population-based research. There is a need for OT population-specific community-based practice to address the health disparities of underserved and minority populations, such as African Americans.

Keywords

psychosocial health, physical health behaviors, community-based practice, population health

Cover Page Footnote

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The profession of occupational therapy (OT) includes in its scope of practice addressing the needs of populations and engaging in community-based practice. Our purpose in this current paper is to demonstrate how population-level research relates to theory and can inform community-based practice. This approach includes a research study examining at a population-level African Americans who receive disability payments compared to those who are employed full time on several physical and psychosocial health indicators. We also provide a contextual perspective, investigating how regional characteristics vary for this population. Through this examination, we hope to demonstrate how population-level research can inform community-based OT practice.

Social Determinants of Health and Health Inequities in African Americans

Health inequities affecting African Americans have existed throughout the history of the United States as a result of the impact of systemic racism and social determinants of health (SDoH) (Buis et al., 2019; DeSantis et al., 2016; Maness et al., 2021; Pan et al., 2019; Yoon et al., 2019). The SDoH are grouped by Healthy People 2030 into five broad categories: economic stability, access to quality education, health care access and quality, neighborhood and built environment, and social and community context (Health.gov, 2021). The health inequities experienced by African Americans relative to SDoH are especially evident during the current COVID-19 pandemic, during which African Americans have been disproportionately impacted with higher COVID-19 infections and death rates compared to other racial and ethnic groups (Kirksey et al., 2020; Rolland, 2020; Snowden & Graaf, 2021). People of color, such as African Americans, and those with low incomes are more likely to experience food insecurity when compared to their wealthier and White counterparts, a condition aggravated during the COVID-19 pandemic (Leddy et al., 2020). Lack of access to health care supporting resources was exacerbated during the COVID-19 pandemic for people of color (Rolland, 2020). For blue-collar workers, many of whom are minorities, including African Americans, the requirements of their work did not always permit social distancing, elevating the risk for COVID-19 exposure and infection (Rolland, 2020).

African Americans with Disabilities

In 2014, 85.3 million Americans were living with a disability, with African Americans accounting for 34.9% of that population. Of African Americans with a disability, 20.2% had a severe disability and 9.9% needed assistance with daily tasks (Taylor, 2018). In addition, as many as 16.2% of African American adults had been receiving treatment for depression, and 6.2% were on medication for mental health issues (SAMHSA, 2018). African Americans experience more mental health issues than do their White counterparts because of various factors unique to their situation, including stigma, economic struggle, racism, and gaps in service provision (Armstrong-Mensah et al., 2020). Literature (Armstrong-Mensah et al., 2020; United States Census Bureau, 2015) suggests there exists a large population of African American adults who either have used or could benefit from OT services, with the potential for that need increasing over time.

Background and Significance

OT Addressing the Health Needs of Populations

Population health promotion is defined as “systematic efforts to build community capacity, strengthen supportive environments, and implement public health policy in order to minimize morbidity and mortality, ensure equitable opportunities, improve health and optimize the quality of life of a community” (Mackenzie & O’Toole, 2011, p. 384). While much of traditional OT practice occurs in one-on-one and group interventions, there is a need for the profession to proactively address population-

based health care needs, disease prevention, and health promotion (AOTA, 2014, 2017, 2018, 2019, 2020; Braveman, 2016; Brownson & Scaffa, 2001; Hocking, 2011; Scaffa, 2014).

The Accreditation Council for Occupational Therapy Education (ACOTE) has set standards for entry-level occupational therapists and occupational therapy assistants, calling on educators to train students to understand the needs of populations. For example, the B.1.6 standard states that entry-level occupational therapists should “Demonstrate knowledge of global social issues and prevailing health and welfare needs of populations with or at risk for disabilities and chronic health conditions” (AOTA, 2018, p.19). ACOTE defines population-based interventions as: “promoting the overall health status of the community by preventing disease, injury, disability, and premature death . . . [including] assessment of the community’s needs, health promotion and public education, disease and disability prevention, monitoring of services, and media interventions” (AOTA, 2018, p. 41).

Given the importance of understanding and addressing the needs of populations, we next briefly review some of the OT research on African Americans, outline a relevant theoretical model, and then describe a population-level study examining potential differences between those who are receiving disability payments (RDP) and those who are employed full time (FTE) in an African American sample.

OT Literature Addressing African American Population

The OT literature on the needs of African Americans is sparse, and much of it is out of date, spanning 1990 to recent years. Belgrave (1991) examined variables correlated with African Americans’ adaptation to disabilities with a study sample of 170 participants, of which only 3% were receiving OT services. Findings of the study suggested that African Americans with three psychosocial health indicators (lower perceived disability severity, higher social support, and higher self-esteem) could be predicted to have more effective adjustment to disability (Belgrave, 1991).

Spencer et al. (2002) examined 6-month changes in scores on the Functional Independence Measure (FIM) for 17 African American elders following the transition from rehabilitation to home. Findings showed that 65% of the elders’ FIM scores improved. Positive influences on elders’ ability to participate in meaningful activities once again were personal values and having several relatives and friends providing caregiving. This finding points to the impact that intrapersonal factors (personal values) and interpersonal factors (multiple caregivers) may have on successful rehabilitation outcomes for this population.

In a large sample of racially and ethnically diverse participants with multiple sclerosis, Buchanan et al. (2010) found African Americans were diagnosed at a later age than their Caucasian counterparts, and that 21.1% of African Americans reported never receiving OT services. Findings of the study suggested that among African Americans, a diagnosis of multiple sclerosis was frequently accompanied by a depression diagnosis (Buchanan et al., 2010), pointing to complex co-occurring conditions. The studies conducted by Belgrave (1991) and Buchanan (2010) indicate that during the time period they were published, OT services were not always accessed by African Americans who might have needed them. What is not clear is whether this lack of OT use was because services were not recommended, sought out, or accessible in African American communities (Belgrave, 1991; Buchanan, 2010). It is difficult to draw conclusions about the current state of OT services with African Americans from the above studies because of the elapsed time since their publication (Belgrave, 1991; Buchanan, 2010; Spencer et al., 2002).

A randomized control trial of African Americans with diabetes and mild cognitive impairment compared an OT behavioral intervention to a community health worker (CHW) educational intervention

over the course of 12 months (Rovner et al., 2020). Findings of the study suggested that there was no significant difference between the two treatment groups (OT vs. CHW); however, glycemic control improved for both groups (Rovner et al., 2020).

Theoretical Model

The Person-Environment-Occupation-Performance Model (PEOP) was chosen as the theory to frame this study because it can be used to examine the needs of populations for the purposes of promoting their health and well-being. The PEOP addresses how the client's intrinsic factors (cognitive, psychological, physiological, sensory, motor, and spiritual), their environmental extrinsic factors (culture, social determinants of health, social support and social capital, education and policy, physical and natural environments, built-environment, and assistive technology), and their occupations (defined in this model as activities, tasks, and roles) overlap with and influence one another (Baum et al., 2015). The model is based on general systems theory (Von Bertalanffy, 1968). It uses a narrative approach (asking clients to tell their stories) with individuals, organizations, and populations, as the client's occupational identity is of particular importance (Baum et al., 2015). When using this model, the desired outcomes for the client, whether a person, an organization, or a population, are successful participation, performance, and well-being in life (Baum et al., 2015).

Study Purpose

The purpose of this paper is to highlight the relevance of population-level research with African Americans for informing the practice of OT and to encourage community-based practice. We do this through secondary analysis of data from a national survey of African American men and women. In light of the call for OT to address the needs of populations, and in recognition of the paucity of OT literature addressing the needs of African Americans, the aim of this population-based analysis is to help advance the profession's insight into some of the unique health issues facing the African American adult population and to facilitate community-based outreach to those with disability.

The first research question (RQ1) was: Do African American adults who are RDP differ from those who are FTE in their physical health behaviors and psychosocial health indicators? The corresponding hypothesis (H1) was: African Americans who RDP (occupation) engage in fewer positive physical health behaviors and experience more negative psychosocial health indicators (intrinsic factors) when compared to African Americans who are FTE (occupation).

The second research question (RQ2) was: Do the regional-level characteristics of the RHIAA participants vary between two types of work status: FTE versus RDP? The corresponding hypothesis for this research question (H2) was: There are regional-level differences (extrinsic factors) in African Americans who are RDP versus those who are FTE (occupation) in physical health behaviors and psychosocial health indicators (intrinsic factors).

The third research question (RQ3) was: Do the relationships in RQ1 (i.e., between intrinsic factors: physical health behaviors and psychosocial health indicators) vary regionally among African American adults, and how do the means of physical and psychosocial health indicators among African American adults who are RDP and who are FTE from five different census regions (Middle Atlantic, East North Central, South Atlantic, East South Central, and West South Central) compare? The corresponding hypothesis for this research question (H3) was: There are regional differences (extrinsic factors) in African Americans who are RDP versus those who are FTE (occupation) in physical health behaviors and psychosocial health indicators (intrinsic factors), although there is insufficient previous research or theory to postulate on the specific nature of the proposed regional differences.

As stated previously, the PEOP provides a unique guiding framework for the current study because it can be applied to examine the needs of populations to promote their health and well-being. The PEOP's intrinsic factors (physical health behaviors, psychological factors; referred to in this study as psychosocial health indicators) and extrinsic factors (represented by regional variation in this study) and occupations (employment status) will be addressed in discussing the current study. The focus will be on the interplay of associations between the occupation via employment status, the intrinsic factors of physical health behaviors and psychosocial health indicators, and the extrinsic factors of regional characteristics highlighting differences in the population of African Americans who are RDP and FTE. Since OT works with clients who have mental and behavioral health issues (AOTA, 2020), this line of research is pertinent to the field of OT. In addition, regional characteristics where one lives or works are equally important for understanding facilitators and barriers to health care accessibility among African Americans and targeted OT needs (Bissonnette et al., 2012; Knott et al., 2020; Leader & Michael, 2013).

Method

Study Sample

The current study was cross-sectional and used nationwide telephone interviews to collect data. The methodology for the Religion and Health in African Americans [RHIAA] (2020) study has been reported in detail elsewhere (Holt et al., 2014; Schulz et al., 2017). Briefly, the participants were eligible if they were 21 years of age or older, self-identified as being African American, and were without a diagnosis of cancer in response to cancer screening questions included in the survey. One adult person per household was invited to participate, and those who agreed received a \$25 gift card after completing the interview. The study was approved by an institutional review board at the University of Maryland, and the participants provided informed consent.

A total of 12,418 households with landlines were telephoned randomly from a national probability sample, and of these, 10,048 people were successfully contacted. After eliminating those who could not be reached by phone, were not eligible, or were not interested in participating, 3,173 participants completed the telephone interview (Holt et al., 2014; Schulz et al., 2017).

Study Measures

Intrinsic Factors

The participants' physical health behaviors were assessed using established measures from national epidemiologic studies. Cigarette smoking and alcohol consumption were measured using the Behavioral Risk Factor Surveillance System (BRFSS), which has been shown to have acceptable test-retest reliability in the target population ($r > .70$) (Centers for Disease Control and Prevention, 2009a, 2009b; Stein et al., 1993). Physical activity in the last 7 days was measured by the short form of the International Physical Activity Questionnaire (IPAQ), which has been found to have acceptable validity for use with African Americans ($r = .26$ for 10-min, $r = .36$ for 1-min of physical exercise) (Craig et al., 2003; Wolin et al., 2008). Fruit and vegetable consumption was measured by a modified version of the National Cancer Institute's Five-A-Day Survey, which has a 2-week test/retest reliability of $r > .70$ (Block et al., 1986; Debnam et al., 2012).

The participants' psychosocial health indicators were also assessed using established measures. Depressive symptoms were measured by the Centers for Epidemiological Studies Depression Scale (CES-D), a widely used instrument that has been validated for use with African Americans (Cronbach's α coefficient = 0.89) (Makambi et al., 2009; Radloff, 1977; Roth et al., 2008). The participants' positive affect and negative affect were measured by the Positive and Negative Affect

Schedule (PANAS) (Watson et al., 1988) with satisfactory reliability and validity (Cronbach's alpha ranging from .86 – .90 for Positive Affect and .84 – .87 for Negative Affect). Finally, the participants' positive and negative religious coping was measured by the Brief RCOPE (Cronbach's α ranging from 0.67–0.94 for Positive Religious Coping; 0.60–0.90 for Negative Religious Coping) (Fetzer Institute: National Institute on Aging Working Group, 1999; Pargament et al., 2011).

Occupation

During the demographic module of the telephone survey, the participants were asked about their employment status, specifically whether or not they worked for pay outside the home. Their self-reported work status was divided into five categories: FTE, part-time employed, not currently employed, retired, and RDP. Those who were RDP or FTE were chosen for our analytic sample of this paper omitting the other employment categories (part-time employed, retired, not currently employed).

Extrinsic Factors

Regional-level indicators or extrinsic factors were drawn from the 2010 American Community Survey of the US Census. The regional analysis was based on the nine US census regions: New England, Middle Atlantic, East North Central, West North Central, South Atlantic, East South Central, West South Central, Mountain, and Pacific (United States Census Bureau, 2020). Using the self-reported addresses of the RHIAA participants, we linked the participants first to their census tracts (neighborhoods), and then the census tracts were organized into one of the nine regions. Because of a sample size of less than 30 in either those RDP or those FTE in four of the regions, the final analyses address only five regions. Therefore, we report our findings from the remaining five regions: Middle Atlantic, East North Central, South Atlantic, East South Central, and West South Central. The methodology of assigning the participants with their census tracts and regions, using Geographic Information System techniques, is described in detail elsewhere (Knott et al., 2020).

We used the following regional-level characteristics: median age reports the median age in years of residents (21 years and above); racial/ethnic diversity is a diversity index that represents the likelihood that two persons, chosen at random from the same region, belong to different racial/ethnic groups (the index ranges from 0 to 100 with higher scores indicating greater diversity); median income and public assistance report the median household income and funds received from public assistance programs in dollars for the past 12 months; percentages of the African American and college-educated (21 years and above) populations in the region were the other two characteristics, further adding to the nuance of regional socioeconomic status.

Analyses

To determine whether or not African American adults who are RDP differ from those who are FTE (occupation) in their physical health behaviors and psychosocial health indicators (intrinsic factors), group means and standard deviations (SD) of the intrinsic factors were compared between work status or occupation using independent sample t-tests.

To examine whether the regional-level characteristics of the RHIAA participants vary between the two types of work status: FTE versus RDP, independent sample t-tests were conducted across each of the five out of nine regions in the US which we are referring to as extrinsic factors. Middle Atlantic, East North Central, South Atlantic, East South Central, and West South Central were compared between the work status or occupation of RDP versus FTE.

To measure whether the relationships between intrinsic factors (physical health behaviors and psychosocial health indicators) vary regionally among African American adults, independent sample t-

tests were conducted in each of the five out of nine regions in the US (extrinsic factors). Middle Atlantic, East North Central, South Atlantic, East South Central, and West South Central were compared between the work status or occupation of RDP versus FTE. We also conducted several two-way (between groups) ANOVAs comparing the means of the physical health behaviors and psychosocial health indicators for work status and regions. For each ANOVA, our dependent variable was one of the physical health behaviors and psychosocial health indicators, and the two categorical independent variables were work status (RDP and FTE) and census regions (Middle Atlantic, East North Central, South Atlantic, East South Central, and West South Central). The assumptions for conducting a two-way ANOVA such as the normality of residuals and homogeneity of variance (via Leven's Test) were met and adjusted for where necessary. If a two-way ANOVA indicated that the interaction effect (work status*regions) was statistically significant at $p < 0.05$, we then conducted TukeyHSD post hoc test for the interaction effects. There were 10 combinations of work status and regions. The interactions post hoc tests compared each pair of these combinations on the means of the physical health behaviors and psychosocial health indicators.

Results

Sample Demographics

Our sample was analyzed for the descriptive characteristics of age (mean and SD), gender, education, marital status, employment, health status, and income by number (n) and percent (%). Of the 3,173 people who participated in the telephone interview across the nine regions, 355 (11.2%) were RDP, and 1,169 (36.8%) were FTE, comprising 48% of the overall sample for a total of 1,524. The remaining 1,630 (52%) of the overall sample were unemployed, employed part time, or retired and were, therefore, omitted from the analytic sample, and 19 participants did not respond. After eliminating participants from the dataset who were residents of the four regions of the US not included in the study because of the numbers in those regions being fewer than 30 in either RDP or FTE, the total analytic sample size was $N = 1,381$.

Fifty-nine percent of our analytic sample were female; 59% had some college education or more; 40% were currently married or living with a partner; 56% were making more than \$30,000 annually; and 76% rated themselves as having good, very good, or excellent health. The participants who were FTE ($M = 3.58$, $SD = .95$) rated themselves as significantly healthier than did the participants who were RDP ($M = 2.41$, $SD = 1.04$), $t(1376) = 19.10$, $p < .001$. The baseline characteristics for the analytic sample participants are summarized in Table 1, followed by the distribution of the analytic sample for the five regions in Table 2 and Figure 1.

Regional Distribution of Sample

Figure 1 shows the five regions included in our analytic sample (see Appendix A). Table 2 shows the distribution of our analytic sample across the five regions: Middle Atlantic, East North Central, South Atlantic, East South Central, and West South Central.

Among the five selected regions, West South Central had the highest percentage of African Americans who were RDP (37.4%). The East North Central, Middle Atlantic, and South Atlantic all had lower percentages of African Americans who were RDP (21%). In terms of FTE, the participants from regions such as the Middle Atlantic, East North Central, and South Atlantic had higher percentages (79%). The lowest percentage of African Americans who were FTE was from the West South Central (62.6%).

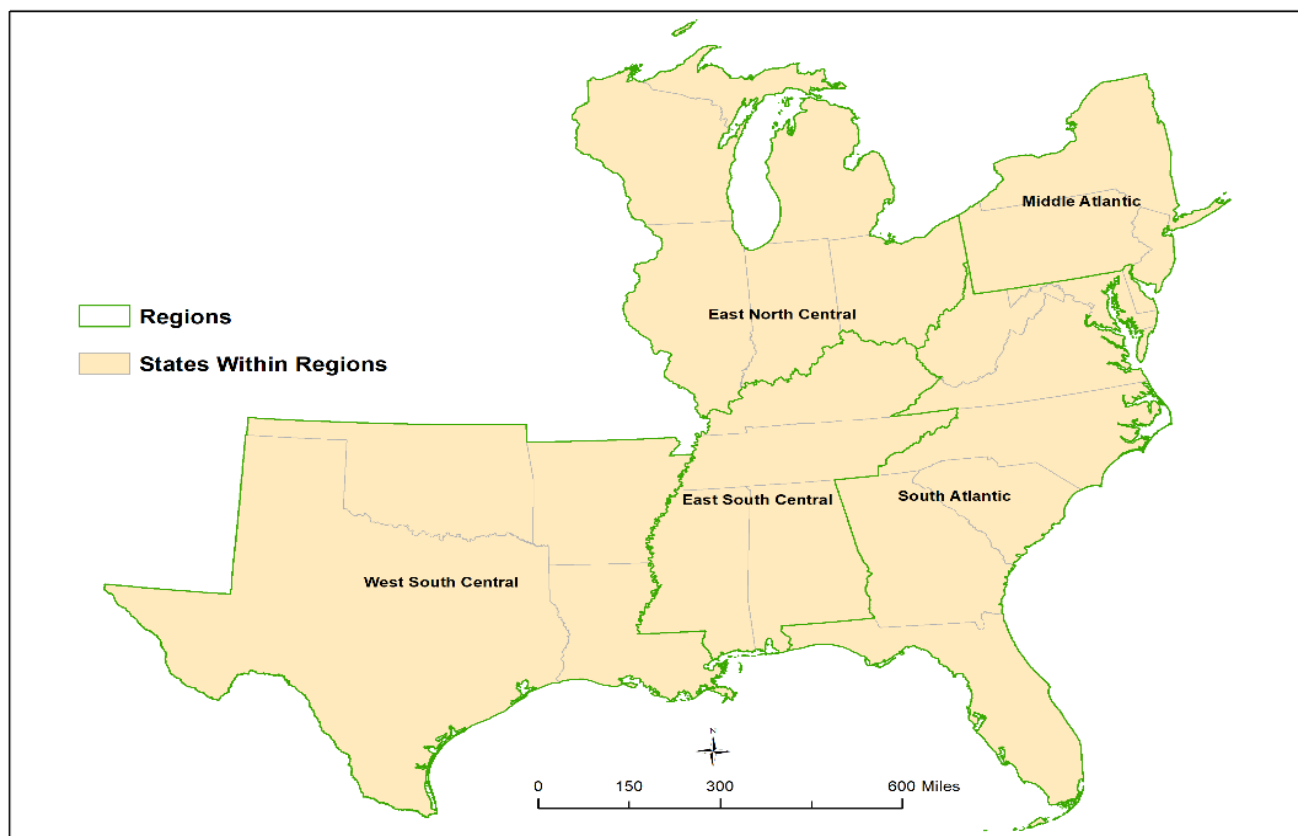
Table 1*Baseline Characteristics for Analytic Sample Participants (N = 1,381)*

Variable	
Age, mean ± SD	48.98 ± 11.47
Age range	21–85
Sex, n (%)	
Female	818 (59.20)
Male	563 (40.80)
Education, n (%)	
< high school	125 (9.10)
High school / GED	442 (32.00)
> some college	810 (58.70)
Marital status, n (%)	
Never been married	201 (14.60)
Currently single	272 (19.70)
Separated or divorced	264 (19.10)
Widowed	96 (7.00)
Currently married or living with partner	546 (39.50)
Employment, n (%)	
Full-time employed	1052 (76.20)
Receiving disability	329 (23.80)
Health status, n (%)	
Poor	70 (5.10)
Fair	255 (18.50)
Good	452 (32.70)
Very good	387 (28.00)
Excellent	214 (15.50)
Income, n (%)	
≤ \$30,000	459 (33.20)
> \$30,000	769 (55.70)

Table 2*Distribution of Sample Participants with FTE Status or RDP by the Five US Census Regions*

US Census Divisions	Work Status		Total
	RDP^a N (%)	FTE^b N (%)	
Middle Atlantic	53 (20.9)	200 (79.1)	253
East North Central	53 (20.5)	205 (79.5)	258
South Atlantic	105 (20.9)	398 (79.1)	503
East South Central	51 (27.1)	137 (72.9)	188
West South Central	67 (37.4)	112 (62.6)	179

Note. a = Receiving Disability Payments; b = Full-Time Employment.

Figure 1*Study Area for Regional Analysis***Research Question 1**

Results for RQ1: “Do African American adults who RDP differ from those who are FTE in their physical health behaviors and psychosocial health indicators?”

Intrinsic Factors: Physical Health Behaviors

As summarized in Table 3, comparing the physical health behaviors between RDP and FTE, African Americans who were RDP consumed significantly less alcohol ($t = -2.11, p = .04$), ate significantly fewer fruits and vegetables ($t = -2.21, p = .03$; $t = -3.73, p < .001$ respectively), and smoked significantly more cigarettes ($t = 5.50, p < .001$) when compared to those who were FTE. African Americans RDP also engaged in significantly less walking and moderate to vigorous physical activity ($t = -6.52, p < .001$; $t = -3.21, p = .001$; $t = -6.57, p < .000$ respectively) when compared to those who were FTE.

Intrinsic Factors: Psychosocial Health Indicators

As also summarized in Table 3, comparing the psychosocial health indicators between the participants who were RDP and those who were FTE, the RDP group had significantly higher depression scores ($t = 11.60, p < .001$) and significantly higher negative religious coping scores ($t = 2.65, p < .01$) in comparison to the FTE group. African Americans RDP also had significantly lower positive affect ($t = -8.48, p < .001$) and significantly higher negative affect ($t = 5.54, p < .001$) when compared to the FTE group. There was no statistically significant relationship when comparing FTE and RDP for positive religious coping ($t = -.92, p < .36$).

Table 3*Comparison of RDP versus FTE on Physical Health Behaviors and Psychosocial Health Indicators*

<i>Physical Health Behaviors</i>	Work Status	Mean (SD)	t (p-value) ^c
How many days per week had 1 drink of alcohol in past 30 days	RDP ^a	.44 (1.23)	<u>-2.11 (.04)*</u>
	FTE ^b	.66 (1.45)	
Smoked at least 100 cigarettes during entire life	RDP	1.55 (.50)	<u>5.50 (.00)***</u>
	FTE	1.35 (.48)	
Fruit servings per day	RDP	2.21 (1.38)	<u>-2.21 (.03)*</u>
	FTE	2.42 (1.35)	
Vegetable servings per day (no French fries)	RDP	1.96 (.92)	<u>-3.73 (.00)***</u>
	FTE	2.22 (.95)	
Walking per week in min	RDP	163.67 (251.23)	<u>-6.52 (.00)***</u>
	FTE	342.79 (395.39)	
Moderate physical activity per week in min	RDP	121.71 (239.11)	<u>-3.21 (.001)***</u>
	FTE	181.86 (287.31)	
Vigorous physical activity per week in min	RDP	124.35 (201.18)	<u>-6.57 (.00)***</u>
	FTE	214.67 (336.78)	
<i>Psychosocial Health Indicators</i>	Work Status	Mean (SD)	t (p-value) ^c
Depressive symptoms	RDP	37.34 (11.86)	<u>11.60 (.001)***</u>
	FTE	29.21 (7.98)	
Positive religious coping	RDP	10.10 (2.05)	-.92 (.36)
	FTE	10.24 (2.07)	
Negative religious coping	RDP	4.48 (2.09)	<u>2.65 (.01)**</u>
	FTE	4.09 (1.67)	
Positive affect	RDP	32.92 (9.76)	<u>-8.48 (.001)***</u>
	FTE	38.84 (8.43)	
Negative affect	RDP	18.00 (7.59)	<u>5.54 (.001)***</u>
	FTE	15.09 (5.66)	

Note. a = Receiving Disability Payments; b = Full-Time Employment; c = p-value is reported for 2-tailed t-test: * $p < .05$; ** $p < .01$; *** $p < .001$.

Research Question 2

Results for RQ2: “Do the regional-level characteristics of the RHIAA participants vary between two types of work status: FTE versus RDP?”

Table 4*Independent Sample t-test of RHIAA Participants' Regional Characteristics by their Work Status: FTE and RDP*

Regional Variables	Work Status	Mean (SD)	t (p-value) ^c
Median income (\$)	RDP ^a	38,194.01 (7483.33)	<u>-3.51 (0.01) ***</u>
	FTE ^b	39,781.24 (7356.40)	
Public assistance income (\$)	RDP	1514.30 (183.91)	<u>-1.97 (0.05) **</u>
	FTE	1537.12 (191.45)	
Racial diversity index ^d	RDP	35.12 (8.01)	0.02 (0.981)
	FTE	35.18 (8.94)	
Median age (in years)	RDP	36.00 (0.70)	-1.26 (0.21)
	FTE	36.10 (0.91)	
College education (%)	RDP	14.53 (1.52)	<u>-1.98 (0.05) **</u>
	FTE	16.65 (1.63)	
African American (%)	RDP	75.10 (6.35)	<u>-1.77 (0.08) *</u>
	FTE	74.52 (8.27)	

Note. a = Receiving Disability Payments; b = Full-Time Employment; c = p-value is reported for 2-tailed t-test: * $p < .05$; ** $p < .01$; *** $p < .001$; d = The value of Racial Diversity Index ranges from 0–100.

The above table (see Table 4) indicates that in a given region (one of the nine US Census divisions), the work status of the RHIAA participants of being either FTE or RDP is associated with the regional level variables such that RDP participants are from areas of lower median income ($t = -3.51, p < 0.001$), less income from public assistance ($t = -1.97, p = 0.05$), a lower percentage of population with higher college education ($t = -1.97, p = 0.05$), and a higher percentage of the African American population in the region ($t = -1.77, p = 0.08$).

Research Question 3

Results for RQ3: “Do the relationships in RQ1 (i.e., between intrinsic factors - physical health behaviors and psychosocial health indicators) vary regionally among African American adults, and how do the physical and psychosocial health indicators among African American adults who are RDP and FTE from five different census regions (Middle Atlantic, East North Central, South Atlantic, East South Central, and West South Central) compare?” We took a two-pronged approach to answer this question, first by running independent sample t-tests, and following that with a 2-way ANOVA. Table 5 shows the independent sample t-test of the participants’ physical health behaviors and psychosocial health indicators by their work status: RDP and FTE, in each of the five US regions: Middle Atlantic, East North Central, South Atlantic, East South Central, and West South Central.

Among the physical health behaviors, the group means of the participants RDP were lower than the participants FTE for being engaged in physical activities, such as walking and vigorous workouts (scoring limited to 180 min). These differences between the participants RDP and the participants FTE were statistically different in all the regions. Consistently, the African American participants RDP walked less and engaged in less vigorous physical activities than the African Americans FTE for all the regions. The participants RDP consumed fewer fruits and vegetables than the participants FTE in Middle Atlantic, East South, and West South Central regions. Although alcohol consumption, in general, was higher among those RDP than those FTE, the difference in group means in the South Atlantic region was in the opposite direction. In this region, the participants RDP consumed less alcohol than the participants FTE. On the contrary, smoking (another indicator of a negative physical health behavior) was more prevalent among those RDP in the regions of Middle Atlantic, East North Central, and South Atlantic, even when those RDP were engaged in less smoking across all the participants in the study.

The experience of having greater challenges with psychosocial health indicators, such as depressive symptoms and lower positive affect, was consistently evident among those RDP when compared to those FTE in all the regions. The African Americans RDP from the South Atlantic region showed both greater negative religious coping and negative affect than the African Americans FTE. In addition, the participants RDP also showed higher levels of negative religious coping only in East North Central and greater negative affect in Middle Atlantic and West South Central regions.

Table 5
Comparison of Physical Health Behaviors and Psychosocial Health Indicators by Work Status Across Five US Regions

Physical Health Behaviors	Work Status	Middle Atlantic		East North Central		South Atlantic		East South Central		West South Central	
		Mean (SD)	t ^c	Mean (SD)	t	Mean (SD)	t	Mean (SD)	t	Mean (SD)	t
		Alcohol	RDP ^a	1.16 (2.16)	0.05	1.03 (1.74)	-1.27	0.91 (1.71)	-1.74*	1.38 (4.0)	-0.77
FTE ^b	1.14 (1.78)	1.65 (2.86)	1.37 (2.04)	1.89 (3.39)		1.39 (2.05)					
Smoking	RDP	1.62 (0.49)	3.50**	1.74 (0.44)	2.93**	1.61 (0.49)	4.93**	1.40 (0.49)	1.17	1.41 (0.49)	0.22
FTE	1.31 (0.46)	1.49 (0.50)		1.30 (0.46)		1.30 (0.46)					
Fruits per day	RDP	1.91 (1.38)	2.15**	2.43 (1.48)	-0.84	2.16 (1.34)	-1.59	2.39 (1.45)	1.16	2.16 (1.30)	1.97**
FTE	2.44 (1.29)	2.45 (1.34)		2.45 (1.39)		2.12 (1.17)		2.63 (1.45)			
Vegetables per day	RDP	1.91 (0.89)	-1.83*	2.09 (0.84)	-0.92	2.07 (0.91)	-1.07	1.87 (0.86)	-1.9**	1.84 (1.00)	2.26**
FTE	2.23 (0.96)	2.23 (0.90)		2.21 (0.97)		2.20 (0.89)		2.23 (1.00)			
Walking	RDP	28.38 (28.83)	2.69**	34.14 (41.87)	2.67**	36.38 (48.25)	3.01**	41.95 (48.11)	-1.92*	27.89 (38.47)	3.39**
FTE	57.10 (58.90)	62.68 (60.98)		60.06 (60.62)		63.60 (64.35)		58.72 (60.21)			
Moderate activity	RDP	31.90 (46.46)	-1.08	39.05 (53.87)	-0.82	34.38 (57.58)	-1.11	30.49 (47.04)	-1.30	28.40 (47.44)	2.36**
FTE	42.68 (53.29)	47.29 (54.78)		42.47 (53.76)		43.28 (54.65)		52.05 (62.78)			
Vigorous activity	RDP	23.09 (39.96)	2.60**	42.24 (54.42)	2.17**	33.96 (50.53)	2.64**	39.13 (50.85)	-1.68*	35.27 (54.24)	-1.17
FTE	50.37 (58.35)	66.18 (62.36)		53.11 (58.54)		58.58 (64.79)		46.71 (57.31)			
Psychosocial Health Indicators	Work Status	Middle Atlantic		East North Central		South Atlantic		East South Central		West South Central	
		Mean (SD)	t ^c	Mean (SD)	t	Mean (SD)	t	Mean (SD)	t ^c	Mean (SD)	t
		Depression	RDP ^a	36.46 (12.90)	4.98**	38.26 (10.57)	6.35**	36.14 (11.79)	8.40**	38.36 (10.51)	4.99**
FTE ^b	29.23 (8.15)	29.86 (7.95)	28.35 (7.33)	30.24 (9.58)		29.98 (7.58)					
Negative religious coping	RDP	4.46 (2.03)	0.08	4.56 (1.46)	2.11**	4.49 (2.37)	2.40**	4.40 (1.80)	0.56	4.47 (2.36)	1.59
FTE	4.43 (2.10)	4.03 (1.40)		3.94 (1.48)		4.21 (1.88)		3.94 (1.51)			
Positive religious coping	RDP	9.80 (2.11)	-0.76	9.67 (2.27)	-0.86	10.20 (2.08)	0.08	10.55 (1.67)	-0.62	10.12 (2.07)	-1.44
FTE	10.10 (2.13)	9.99 (2.10)		10.17 (2.15)		10.74 (1.66)		10.60 (1.87)			
Positive affect	RDP	34.03 (10.30)	2.45**	31.58 (8.47)	4.81**	33.97 (9.81)	4.50**	32.24 (10.59)	3.34**	32.32 (9.59)	4.98**
FTE	38.10 (8.48)	38.79 (8.04)		39.13 (8.34)		38.02 (8.82)		38.02 (8.89)			
Negative affect	RDP	19.24 (8.10)	3.56**	17.08 (6.86)	1.51	18.20 (7.66)	4.20**	15.98 (6.41)	0.91	19.17 (8.3)	3.37-***
FTE	15.15 (5.52)	15.50 (5.57)		14.86 (5.57)		14.98 (6.50)		15.26 (5.31)			

Note. a = Receiving Disability Payments; b = Full-Time Employment; c = p-value is reported for 2-tailed t-test: *p < .05; **p < .01; ***p < .001.

We also examined the main and interaction effects of work status and regions (residential location) on the physical and psychosocial health indicators among African American adults. Table 6 shows results from a 2-way ANOVA for this analysis. Table 7 provides summary of the regional comparison of means for participants RDP compared to FTE.

Table 6

*Comparing Means of Physical Health Behaviors and Psychosocial Health Indicators for Interactions Between Work Status and Regions via two-way ANOVA. The F Value of Main Effects (Work, Region) and the Interaction Effect (Work*Region) are Reported.*

<i>Physical Health Behaviors</i>	Work Status	F-value (p-value)
How many days per week had 1 drink of alcohol in past 30 days	Work	3.18 (.075)
	Regions	1.46 (.21)
	Work*Regions	0.46 (.77)
Smoked at least 100 cigarettes during entire life	Work	34.94 (4.6e-09) ***
	Regions	5.83 (.0001) ***
	Work*Regions	2.67 (.03) *
Fruit servings per day	Work	4.90 (.03) *
	Regions	0.87 (.48)
	Work*Regions	1.84 (.12)
Vegetable servings per day (no French fries)	Work	12.21 (.0005) ***
	Regions	0.65 (.63)
	Work*Regions	0.58 (.68)
Walking per week in min	Work	36.50 (2.16e-09) ***
	Regions	1.08 (.36)
	Work*Regions	0.15 (.963)
Moderate physical activity per week in min	Work	8.78 (.003) **
	Regions	0.36 (.84)
	Work*Regions	0.49 (.746)
Vigorous physical activity per week in min	Work	21.24 (<4.57e-06) ***
	Regions	2.88 (.021) *
	Work*Regions	0.32 (.86)
<i>Psychosocial Health Indicators</i>	Work Status	F-value (p-value)
Depressive symptoms	Work	187.20 (< 2e-16) ***
	Regions	5.48 (.0002) ***
	Work*Regions	0.37 (.83)
Positive religious coping	Work	2.05 (.153)
	Regions	3.41 (.001) **
	Work*Regions	0.38 (.82)
Negative religious coping	Work	8.99 (.0028) **
	Regions	1.64 (.16)
	Work*Regions	0.59 (.67)
Positive affect	Work	81.83 (<2e-16) ***
	Regions	1.34 (.25)
	Work*Regions	1.02 (.40)
Negative affect	Work	39.38 (5.12e-10) ***
	Regions	1.63 (.17)
	Work*Regions	1.57 (.18)

Note. Work Status = Receiving Disability Payments (RDP) and Employed Full Time (FTE); Regions = Middle Atlantic, East North Central, South Atlantic, East South Central, and West South Central. p-value is reported for 2-tailed t-test: *p < .05; **p < .01; ***p < .001.

Table 7*Summary of Regional Comparison of Means for Participants RDP versus FTE.*

Variables	Comparison of Means RDP ^a Vs FTE ^b					
	Middle Atlantic	East North Central	South Atlantic	East South Central	West South Central	United States
<i>Physical Health Behaviors</i>						
Alcohol Consumption			Less			More
Smoking	More	More	More			Fewer
Fruits Per Day	Fewer				Fewer	Fewer
Vegetables Per Day	Fewer			Fewer	Fewer	Fewer
Walking	Less	Less	Less	Less	Less	Less
Moderate Activity					Less	Less
Vigorous Activity	Less	Less	Less	Less		Less
<i>Psychosocial Health Indicators</i>						
Depression	More	More	More	More	More	More
Negative Religious Coping		Greater	Greater			Greater
Positive Religious Coping						
Positive Affect	Lower	Lower	Lower	Lower	Lower	Lower
Negative Affect	Greater		Greater		Greater	Greater

Note. Only statistically significant results are compared.

a = Receiving Disability Payments, b = Full-Time Employment.

As summarized in Table 6, the main effects of the work status of the African Americans were statistically significant for all the physical health behaviors except for alcohol consumption, indicating that income has a significant positive relationship with maintaining a healthy diet (e.g., consumption of fruits and vegetables) and engaging in physical activities (e.g., walking, exercise). For the African Americans engaged in vigorous physical activity, both the main effects of their work status ($F = 21.24$, $p < .001$) and regional location ($F = 2.88$, $p < .01$) were statistically significant. The level of vigorous physical activity that the African Americans were engaging in was explained by both their income level and their regional location.

Smoking was the only physical health behavior among the African Americans that had a statistically significant interaction between the effects of their work status and regional location ($F = 2.67$, $p < .05$). The TukeyHSD post hoc test for the interaction effects revealed nuanced statistically significant interaction combinations. In general, the African Americans who were RDP smoked significantly more cigarettes when compared to those FTE (see Table 3). Specifically, the combination of African Americans who were RDP and living in the Middle Atlantic region smoked more cigarettes than the African Americans FTE and from the regions of South Atlantic (*mean difference* = -0.31 , $p = .01$) and East South Central (*mean difference* = -0.35 , $p < .05$). Similar were the effects of the combinations of African Americans who RDP from the East North Central region compared to African Americans with FTE from the South Atlantic and East South Central regions. The African Americans who were FTE and lived in the Middle Atlantic region smoked fewer cigarettes than those FTE living in the East North Central (*mean difference* = 0.18 , $p < .05$) but more than those FTE living in the South Atlantic region (*mean difference* = -0.18 , $p < .01$).

The main effects of the work status of the African Americans were statistically significant for all the psychosocial health indicators, indicating that income has a significant relationship with depression,

religious coping, and affect (see Table 6). For depression alone, both the main effects of work status ($F = 187.20, p < .001$) and regional location ($F = 5.48, p < .001$) were statistically significant, indicating that both these factors significantly interact with depressive symptoms among African Americans.

Discussion

The purpose of this paper was to highlight the relevance of population-based research with African Americans for informing the practice of OT and to encourage the development of a more diverse workforce. To do so, we examined the intrinsic factors of physical health behaviors and psychosocial health indicators comparing the occupations of African Americans RDP versus African Americans FTE using the extrinsic factors of study participants' regional context. The results of this study suggest, with the exception of drinking alcohol, that African Americans who are RDP are more likely to engage in adverse health behaviors and less likely to engage in health-promoting behaviors compared to those FTE, which may or may not be a result of their disability. Regarding physical activity, it is plausible that the African Americans RDP would be less physically active than the African Americans FTE, since living with a disability could impede engagement in physical activity, whether the disability is physical, behavioral health, cognitive, and/or developmental in nature. African Americans who were RDP also reported eating a less healthy diet and having worse psychosocial health than those in the FTE group. This points to African Americans having differential access to healthier food choices that could be because of the SDoH of food insecurity or economic instability.

Geospatial variations emerged as well, with African Americans in some regions of the country exhibiting lower levels of physical health behaviors and psychosocial health indicators than others. These variations may be the result of regional differences in income, education level, and racial diversity, as well as irregularities in the implementation of health behavior policies and interventions, such as smoking restriction and/or bans. Future research should examine the mechanisms underlying regional differences.

The findings from this study and prior research using the same sample of RHIAA study participants are relevant to the issue of a need for population-based community-based OT practice addressing the needs of African Americans. It is in the scope of practice of OT to address the needs of populations, health management, social participation, and the social context; also, participation in religious activities, the client factor of spirituality, the performance patterns of habits, and clients' physical and emotional functioning (AOTA, 2014, 2020). For example, findings from prior studies with RHIAA participants suggested that positive health behaviors and negative health behaviors, or the lack thereof, including fruit and vegetable consumption, physical activity, alcohol consumption, and smoking, were influenced by religious involvement and the social context for African Americans (Holt et al., 2013). These positive and negative health behaviors can be considered as habits in OT terminology (AOTA, 2020), which we suggest can be cultivated or extinguished through OT community-based programs. Regarding religious involvement relative to health behaviors, in some cases, women responded differently from men (Holt et al., 2015). Education level was a predictor for health behavior choices and intrinsic emotional well-being in African Americans (Park et al., 2019). When we looked at the regional variations of positive and negative health behaviors among African Americans, socioeconomic status indicators of regions such as income, educational level, and race were also the strongest predictors (Knott et al., 2020).

The findings from this current study point to a role for employment status and regional characteristics in shaping African Americans' physical health behaviors and psychosocial health

experiences. For example, findings suggest that African Americans who RDP live in regions with lower median income, lower public assistance income, less college education, and a higher percent of African Americans when compared to their African American counterparts FTE. This suggests that fewer financial and educational resources are available to African Americans RDP regionally, again pointing to the social determinants of health of “economic stability” and “education access and quality” as contributing factors.

Relative to the PEO model, findings suggest that the occupational identity of being employed may be important in African Americans for engagement in positive physical health behaviors. Perhaps this may stem from people who are employed being able to afford to live in areas with better access to healthier food choices and safer physical activity options (the social determinant of health “neighborhood and built environment”), unlike those who are low-income or lacking income (Park et al., 2020). African Americans RDP are lacking the occupational identity of being an employed person, and this study suggests that this could have deleterious effects on their health (Evans et al., 2020; Ricks et al., 2020). This evidence is supported by the extant literature suggesting that negative behavioral health outcomes are protected by people being engaged in full-time employment, living in regions with a high average household income, having access to support from public assistance programs, and living in regions comprised of individuals with high levels of education and racial diversity (van der Noordt et al., 2014). These protective factors are addressed by the social determinant of health “economic stability.”

The issue of employment status for African Americans becomes further compounded by the intersection of disability and race (Alston et al., 1996). Research suggests that African Americans with disabilities often face disparities when compared to African Americans who do not have a disability (Mpofu & Harley, 2006). These disparities need to be clearly articulated, better understood, and systematically addressed by occupational therapists and health care providers (Hall, 2020; Miranda et al., 2020) not only at the individual client level but also from a regional perspective.

The socioeconomic context of neighborhoods (indicated either by demographic data from census tracts or regions as shown in this study) appears to play an important role in the health behavior of African Americans RDP. It is interesting to note that African Americans from certain regions of the country are less likely to engage in positive physical health behaviors and experience fewer positive psychosocial indicators than other populations in the same region. This research finding is important because of the health disparities between African Americans and White Americans (Buis et al., 2019; DeSantis et al., 2016; Pan et al., 2019; Yoon et al., 2019). In general, African Americans RDP do not fare as well as those FTE in their health and level of income. Minorities, such as African Americans, tend to earn less money than their White American counterparts (Assari et al., 2020). Physical health and mental health in African Americans with disabilities are negatively influenced by financial concerns (American Psychological Association, 2020; Assari et al., 2020).

Evans et al. (2020) suggest that among older African Americans “financial difficulties seem to be linked to chronic pain, chronic medical conditions, self-rated health, sick days, and depressive symptoms” (p. 1). Since the social determinants of health of “economic stability,” “education access and quality,” and “neighborhood and built environment” were factors that appear to influence the findings of this study, the authors call for further exploration into how social determinants of health affect African Americans and suggest that providers address financial, educational, and regional issues with this population for health promotion. Occupational therapists should capitalize on their awareness of regional and associated socioeconomic variations and develop local programs leveraging the

profession's unique skill set; targeting holistic occupation-based needs; and facilitating the healthy habits, routines, and coping skills of African Americans RDP at a population level.

Limitations

The data used in this study were collected via a telephone survey and are subject to self-report bias, socially desirable responses, and issues with recall memory. Landlines were used, rather than a combination of cell phones and landlines, resulting in a sample that was somewhat older than the national population; therefore, there may be some generational bias. Another limitation is the cross-sectional nature of this analysis. We cannot make any inferences about the participants' work status causing their physical health behaviors and psychosocial health indicators, or temporal inferences regarding which came first.

Implications for Future Practice, Education, and Research

For African Americans RDP, occupational therapists could develop community-based programs for increasing healthy eating and physical activity and promoting smoking cessation for the purposes of health management (AOTA, 2017, 2020), especially in certain regions of the country. Occupational therapists could also develop group and population-level community-based programs addressing increasing positive affect and positive coping strategies for primary prevention (AOTA, 2017). Occupational therapists could also work with gyms or fitness centers to offer workout equipment accessible to individuals who use wheelchairs and programs that make healthy physical exercise more readily accessible to those with disabilities.

To develop such programs, occupational therapists should conduct a needs assessment, keeping in mind the regional factors that may be associated with the intrinsic factors, occupations, and experiences of successful participation, performance, and well-being in the lives of African Americans with disabilities (Baum et al., 2015). Such projects could be incorporated into entry-level OT programs when teaching students about issues facing specific populations, including African Americans with disabilities.

Regarding educational implications, teaching students how to conduct population-based needs assessments and how to develop programming that targets the specific occupational needs of African Americans (or other minorities) with or without disabilities would be a good approach. For entry-level occupational therapy clinical doctorate (OTD) programs, this also could be the basis for an OTD capstone project.

Similarly, population-based research on the occupational needs, health disparities, health inequities, and occupational injustices facing the African American community is important. Research involving gatekeepers to the African American community and incorporating community health advisors to deliver health and occupation-based content is one suggested approach. Meeting people in their communities, using their strengths and resources, facilitating resilience, and listening with a sincere desire to understand and to be of service to them will go a long way in building a rapport while at the same time providing opportunities to study and find ways to address occupational injustices at a community-based level.

Conclusion

This study reinforces the importance of population-based research in OT, addresses a gap in the OT literature, uses the unique lens of the PEO model, and provides a foundation for building community-based practice with the African American population. This study demonstrates that population-based research can inform the profession of OT. Very little OT research has focused on the

needs of African Americans. This study provides valuable information for occupational therapists serving African American clients and demonstrates that they have specific needs as a population. Breland and Ellis (2012) suggest that occupational therapists should report race and ethnicity in their research to facilitate an understanding of the diverse clients we serve. However, to date, no study has considered regional differences in OT resources. The population-based research described here can serve as a catalyst for the development of population-specific programming and a community-based practice and practice model to address the needs of African American clients.

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