

Predictors of Treatment Preferences Among Community Dwelling Older Adults with Depression

Aimy Patrice Paulsen

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Committee:

Miruna Buta

Patrick Raue

Lesley Steinman

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Department of Health Systems and Population Health

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Aimy Patrice Paulsen

University of Washington

Abstract

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Aimy Patrice Paulsen

Chair of the Supervisory Committee:

Miruna Buta

Department of Health Systems and Population Health

Older adults with depression experience substantial disability and mortality, yet mental health service utilization remains disproportionately low relative to need. Diagnostic challenges and lower rates of treatment initiation further contribute to this disparity. Understanding treatment preferences may help align care with older adults' perspectives on acceptability and feasibility. Task-sharing, in which trained lay providers deliver care, can increase access to mental health services in community settings, though patient perceptions of these approaches remain understudied. This study addressed two research questions. RQ1 examined demographic and clinical factors associated with preferences for active (e.g., psychotherapy, medication) versus complementary (e.g., exercise, spiritual practices) treatment approaches. RQ2 evaluated whether perceived treatment credibility differed between lay-delivered and clinician-delivered interventions following initial exposure. This was a secondary cross-sectional analysis of

baseline data from a randomized controlled trial (Do More, Feel Better). For RQ1 ($N = 326$), logistic regression models examined associations with treatment preference. For RQ2 ($N = 252$), Wilcoxon rank-sum tests compared credibility ratings across four Likert-scale items after the first treatment session. Most participants (74.5%) preferred active treatment approaches. Prior experience with both psychotherapy and medication was the strongest correlate of this preference. Estimates for demographic and clinical characteristics were less precise after adjustment. Credibility ratings were high and comparable between lay-delivered and clinician-delivered interventions. These findings suggest that prior treatment experience may shape treatment preferences and that lay-delivered interventions can achieve early credibility comparable to clinician-delivered care. Attention to patient preferences and perceived acceptability may support scalable depression care models for older adults.

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Background

Depression in older adults is a global public health concern and a substantial contributor to disability, functional decline, morbidity, and mortality worldwide (Walker et al., 2015). Even in mild presentations, depression is associated with poorer health outcomes and lower quality-

adjusted life years in older adults compared to those without depressive symptoms (Jia & Lubetkin, 2017). In later life, developing major depressive disorder (MDD), a more severe form of depression, further confers an elevated risk of suicide, with suicide mortality rates increasing substantially with age—especially among males (CDC, 2018).

Effective, acceptable, and safe treatments exist for older adults with depression in the United States. Clinical guidelines by the American Psychological Association (APA) include age group-specific recommendations for the treatment of depression, including the importance of shared decision-making when prescribing psychotherapy or antidepressant medication (APA, 2019). However, the levels of referral, initiation, and adherence of such treatments among older adults remain lower than would be expected based on prevalence of the condition, clinical guidelines, and service availability (Byers et al., 2012). These disparities are especially pronounced among racially, linguistically, and socioeconomically marginalized older adults (Conner et al., 2010; Jimenez et al., 2015). Investigating treatment preferences among older adults with depression can disentangle personal and structural factors that contribute to these engagement discrepancies. Doing so will help align late-life depression programs and policies toward patient-centered care—widely considered the gold standard of modern health care delivery (Epstein & Street, 2011; Sillner et al., 2021).

Late-Life Depression: Diagnosis and Treatment

Late-life depression (LLD) is commonly conceptualized as depression occurring at age 60 or 65 and older. Risk factors for LLD include female sex, chronic somatic illness, cognitive impairment, functional impairment, lack of close social contacts, personality traits, stressful life events, and a history of depression (Espinoza & Unützer, n.d.; Kok & Reynolds, 2017). While the core symptoms of depression outlined in the DSM-5 remain consistent across adulthood,

there is evidence to suggest that LLD differs from earlier-life depression in its etiology, symptom profile, and association with medical comorbidities (Husain-Krautter & Ellison, 2021; Zhao et al., 2023). Depression in late life shows higher chronicity, with higher relapse rates and greater links to cognitive and cardiovascular comorbidities than depression in early to middle adulthood (Deng et al., 2018; Hegeman et al., 2012). Compared to younger cohorts, older adults often present with more somatic and functional symptoms of depression (e.g., fatigue, pain, gastrointestinal complaints) and less often with cognitive-affective features (e.g., guilt or loss of sexual interest; Drayer et al., 2005; Hegeman et al., 2012; Schaakxs et al., 2017). These clinical differences may lead to the under-recognition and under-treatment of depression in later life, with implications for both clinical engagement and preferences for different treatment approaches.

Pharmacological therapies lead to a significant reduction in depression symptoms among older adults (Zhao et al., 2023). Selective serotonin reuptake inhibitors (SSRI) are typically first-line depression medications that may be prescribed by psychiatric specialists or primary care doctors (G. H.-M. Wang et al., 2024). Despite their proven effectiveness across clinical trials, there are potential interactions of SSRIs and aging-related difficulties, such as liver and kidney problems, cognitive impairment, and motor functioning (G. H.-M. Wang et al., 2024).

Pharmacotherapy also presents additional challenges to adherence among older adults compared to psychotherapy, partially explained by polypharmacy and medication side effects (Kok & Reynolds, 2017; Matthews et al., 2021).

Psychotherapy is highly effective for treating mild to moderate depression in older adults, due to its capacity to address underlying psychological contributors to depression, facilitate skill-building, and support sustained adherence compared to pharmacological approaches

(Alexopoulos, 2019; Francis & Kumar, 2013). Problem-solving therapy, cognitive behavioral therapy, and interpersonal therapy have comparable efficacy in treating late-life depression (Francis & Kumar, 2013; Gum & Crawford, 2026). Psychotherapy demonstrates similar levels of short-term efficacy to pharmacotherapy and is significantly more effective than control conditions; though it is generally less effective than combining both treatments in the acute phase for patients with moderate depression (Cuijpers et al., 2020, 2021). Despite this, psychotherapy is often more acceptable to patients than medication alone and may offer superior enduring effects after treatment ends (Cuijpers et al., 2020; Karyotaki et al., 2016).

Lifestyle-based strategies—including physical exercise and diet modification—have also been shown to complement traditional treatments and improve outcomes under experimental conditions (Zhao et al., 2023). A meta-analysis of 18 randomized controlled trials including older adults with elevated depressive symptoms found a moderate effect of exercise on posttreatment depression scores. Effects were significant across exercise types and for supervised interventions (Heinzel et al., 2015). Other complementary and alternative approaches, while sometimes preferred by older adults to treat a range of ailments including depression, show limited evidence of benefit in alleviating depressive symptoms. The APA Clinical Practice Guidelines offer only conditional recommendations for standalone treatments with small to moderate effects, including yoga, bright light therapy, and St. John's Wort. Evidence remains insufficient to support the use of Tai Chi, acupuncture, and omega-3 fatty acid supplementation for depression (APA, 2019).

The preceding sections have described the epidemiology and clinical significance of late-life depression (LLD), including its prevalence, burden, functional impact, and the range of available treatments. Despite the existence of effective interventions, however, there remains a substantial gap between treatment need and treatment engagement among older adults.

Understanding the provider-, system-, and individual-level factors that contribute to this gap can inform more accessible and acceptable models of late-life depression care. The following section applies Andersen's Behavioral Model of Health Service Use to organize these determinants.

Gaps in Depression Treatment Utilization

Andersen's Behavioral Model of Health Service Use categorizes the determinants of healthcare engagement into three domains: predisposing characteristics (e.g., demographic factors, beliefs), enabling resources (i.e., factors that facilitate or inhibit access to care), and need factors (i.e., perceived and evaluated illness; Andersen & Davidson, 2007). At the provider and system levels, enabling factors can facilitate or constrain older adults' engagement in depression care. For example, a national shortage of a mental health care workforce, especially one with adequate training in geriatric mental health, presents challenges to older adults seeking psychological services (National Center for Health Workforce Analysis, 2024). Compounding this, national screening records from primary care clinics indicate that older adults do not receive behavioral health screenings at the same rate as younger cohorts, limiting their ability to initiate treatment (Akincigil & Matthews, 2017). These trends can be due to both provider-side (e.g., under-recognition of symptoms in older adults) and patient-side factors (e.g., knowledge and beliefs about depression care). Implementing routine depression screenings can enhance service utilization and clinical outcomes, regardless of symptom presentation during primary care visits (U.S. Preventive Services Task Force, 2023). Older adults most frequently present symptoms of, and ultimately receive treatment for, depression in primary care clinics rather than specialty mental health care (Gundersen & Bensadon, 2023; Mickus et al., 2000). According to the U.S. Preventive Services Task Force, available depression screening instruments effectively identify depression in older adults, and screening programs in primary care settings result in moderate

improvements in health outcomes. This is a key leverage point that integrated health programs, such as the collaborative care approach, have successfully addressed in various primary care contexts (Unützer et al., 2002).

Even when depression is identified, however, older adults tend to seek out psychological services at a lower rate than other age groups after diagnosis (Elshaikh et al., 2023; G. H.-M. Wang et al., 2024). Individual predisposing factors may affect depression treatment initiation, such as education level, socioeconomic status, prior experience with depression treatment, and beliefs about mental health care (Matthewson et al., 2025; Raue et al., 2011). At the individual level, enabling factors include both practical challenges to engaging in care (e.g., transportation limitations or mobility issues) and facilitators (e.g., availability of preferred treatment options), which can shape engagement in care (Dwight-Johnson et al., 2000; Lin et al., 2005; Matthewson et al., 2025). In addition, constructs from the Theory of Planned Behavior (Ajzen, 1991) may help further specify need factors within Andersen's model. In particular, attitudes toward treatment, perceived social norms regarding help-seeking, and perceived behavioral control may shape individuals' perceived need to engage in care, thereby influencing treatment preferences and subsequent service use.

Although some research has begun to examine how these factors relate to treatment initiation, adherence, and continuation over time (Del Rosario et al., 2025; Sirey et al., 2016), less is known about the mechanisms through which predisposing, enabling, and need factors jointly influence treatment engagement among older adults. One such mechanism is treatment preference, which may reflect both individual beliefs (predisposing factors) and the alignment between available services and patient needs (enabling factors).

Treatment Preferences in Depression Care

Matching psychological treatment preferences to offered care is associated with higher initiation and adherence (Liu & Gellatly, 2021; Raue et al., 2009; Winter & Barber, 2013). Operationally, treatment preferences represent a patient's inclination toward specific strategies for managing a condition. Treatment options for late-life depression can be broadly organized into two categories. Active approaches include evidence-based clinical interventions that directly target depressive symptoms, such as pharmacotherapy, individual counseling, and group therapy (Devita et al., 2022; Husain-Krautter & Ellison, 2021; Raue et al., 2011). Complementary approaches encompass non-clinical or adjunctive strategies—such as exercise, social support (e.g., talking to friends), religious or spiritual activities, and herbal remedies—that do not involve a psychological health service (Raue et al., 2011); though as described above, these approaches vary considerably in their evidence base.

Treatment preferences are also potentially associated with demographic and clinical factors, including prior treatment experiences, depression severity, gender, and attitudes toward mental health care (Gum et al., 2006). Racial and ethnic differences in preferences are a consistent finding across this literature. Compared to non-Hispanic White older adults, Black and African American older adults report lower preference for pharmacological treatments and greater preference for care delivered by spiritual leaders or primary care providers rather than specialty mental health clinicians (Jimenez et al., 2012; Lee et al., 2021; Raue et al., 2009). These patterns may be linked to historical and ongoing experiences of medical racism and unethical research practices, which contribute to mistrust in formal healthcare systems (Fernandez Y Garcia et al., 2011). Behavioral and psychosocial interventions may also represent a stronger fit for older communities of color, given their emphasis on relational engagement and

cultural congruence (Jimenez et al., 2022). Asian American and Hispanic older adults have similarly reported lower preference for counseling compared to non-Hispanic White peers, though across all groups, counseling tends to be preferred over antidepressant medication (Jimenez et al., 2012; Lee et al., 2021). These differences may reflect language barriers, cultural norms, and differential histories of access and stigma rather than innate differences in values.

Qualitative research suggests that depression treatment engagement among older adults is shaped by proximal factors such as perceived benefit, suitability, familiarity, and practicality of treatment (Liu & Gellatly, 2021). These factors are commonly expressed through individuals' stated treatment preferences. At the same time, treatment engagement patterns vary systematically by demographic and clinical characteristics, including age, race and ethnicity, socioeconomic status, and physical functioning. Together, this evidence suggests that treatment preferences may serve as a mechanism that links upstream structural and social factors (e.g., access, stigma, prior experiences) to downstream engagement behaviors.

Although many studies examine how demographic and clinical factors relate to treatment access and utilization, far less is known about how they shape treatment preferences themselves. Understanding preferences may therefore provide a useful lens for examining how broader structural influences are reflected in individuals' treatment decisions. Preferences are unlikely to be uniform across populations, yet relatively few comparative studies have looked at demographic and clinical characteristics associated with treatment preferences. Examining how treatment preferences vary by demographic and clinical profiles can identify patterned differences that may reflect broader health inequities and inform future explanatory models of more patient-centered interventions.

Despite the growing body of research on treatment preference and engagement, few studies have rigorously examined how older adults view community-based interventions, particularly those delivered by trained lay volunteers. Expanding the capacity and reach of the mental health workforce has become a central priority in addressing gaps in access to care, and task-sharing models—where low-intensity, evidence-based interventions are delivered by non-specialist providers under supervision—have emerged as a viable strategy to address these shortages (Renn et al., 2023). These models have the potential to extend service capacity while preserving specialist resources.

Although these interventions are often delivered in community settings, they are increasingly recognized as formal health services, as they involve structured, evidence-based approaches implemented by trained personnel. A growing evidence base supports the feasibility, acceptability, and clinical benefits of lay-delivered interventions for depression and other common mental health conditions (Renn et al., 2023); however, their implementation in the United States remains limited. Clinical effectiveness alone is insufficient for improving access to care, as implementation outcomes such as acceptability and feasibility determine whether interventions are adopted and sustained (Proctor et al., 2011). Little is known about how older adults evaluate these approaches relative to traditional clinician-delivered treatments. Understanding these comparative preferences is essential for informing the design and scaling of task-sharing models in geriatric mental health care (Javadi et al., 2017; Raue, Sirey, et al., 2019).

Current Study

Study Rationale

Understanding older adults' preference for and acceptance of different treatment methods, including lay-delivered approaches, is requisite in addressing workforce shortages and

expanding access to equitable mental health care (Raue et al., 2021). Andersen's Behavioral Model offers a useful framework for this aim: because the model is concerned broadly with why individuals seek or accept care, preferences do not need to be examined at the level of individual modalities. Grouping pharmacotherapy, individual counseling, and group therapy into a single "active" category addresses a meaningful distinction, in that these approaches share direct engagement with a health service to treat depression, whereas complementary strategies operate outside of formal care. This conceptual grouping has been applied in prior work but has not been extended upon in the treatment preference literature. The present study builds on findings by Raue and colleagues (2011) using a sample of older adults with clinical levels of depression to identify factors associated with treatment preferences and whether individuals prefer active or complementary approaches. The study also evaluates the perceived acceptability and credibility of lay-delivered interventions compared to clinician-delivered treatments, contributing to the literature on task-sharing strategies. Although a growing body of research supports the clinical effectiveness and feasibility of lay-delivered approaches, far less is known about how these interventions are perceived by patients, particularly in comparison to traditional clinician-delivered care.

The study addresses a gap in the literature by examining the association between treatment preferences and demographic, clinical, and contextual factors among older adults with depression. Understanding these associations can inform patient-centered referral strategies such as shared decision-making, and the design of integrated, acceptable mental health programs for older adults across diverse U.S. settings. A conceptual model incorporating Andersen's model (Andersen & Davidson, 2007) with constructs from the Theory of Planned Behavior (Ajzen, 1991) can be found in the Appendix.

Research Questions and Hypotheses

This study aimed to answer two research questions: (RQ1) What demographic and clinical factors are associated with preferences for active versus complementary depression treatment approaches among older adults? and (RQ2) Do perceptions of treatment credibility differ between older adults randomized to clinician-delivered versus lay-delivered interventions following initial treatment exposure?

Based on prior literature, the following confirmatory hypotheses were specified for RQ1: (H1) Prior experience receiving depression treatment (e.g., psychotherapy or antidepressants) was expected to be associated with preferring active approaches over complementary ones (Gum et al., 2006; Raue et al., 2011). Active treatment preference was also expected to vary by individual characteristics (Raue et al., 2011), with higher rates predicted among individuals who (H2) had greater depression severity, (H3) had more years of education, and (H4) identified as non-Hispanic White. An exploratory aim (E1) was also specified for RQ1. Specifically, the study examined whether there was an association between baseline medical comorbidity burden and preference for active versus complementary treatment approaches. This analysis was exploratory, as prior research has not clearly established how comorbidity burden relates to treatment preferences in late-life depression.

For RQ2, an exploratory hypothesis (E2) was specified. It was expected that there would be no meaningful difference in participant-rated treatment credibility between lay-delivered treatment and clinician-delivered interventions following initial exposure. Few studies have explored how older adults evaluate the credibility and acceptability of task-sharing approaches relative to traditional clinician-delivered care; this aim addresses this understudied area.

Methods

Study Design and Setting

This study was a secondary data analysis from a non-inferiority randomized controlled trial comparing a simplified, lay-delivered behavioral activation (BA) protocol—"Do More, Feel Better" (DMFB)—with a traditional BA protocol delivered by licensed mental health clinicians (Raue et al., 2022). Study sites comprised eighteen senior centers across three metropolitan areas in the states of Florida, New York, and Washington. Centers served English- ($k = 12$) or Spanish- ($k = 6$) speaking community-dwelling older adults. Data from baseline assessments and initial treatment sessions were used for this cross-sectional analysis.

Participants

Participants were recruited through community-based channels, including senior center referrals, study flyers, and broader community outreach. A total of 499 older adults were assessed for baseline eligibility, first through a phone screening then through a baseline assessment. To be eligible, individuals had to be 60 years of age or older and present with clinically significant depressive symptoms ($\text{PHQ-9} \geq 10$ at phone screen, $\text{HAM-D} \geq 14$ at baseline). Exclusion criteria included current participation in psychotherapy; current use of antidepressant medication unless at a stable dose for at least 12 weeks; severe cognitive impairment or dementia; current active suicidal ideation; symptoms of other psychiatric disorders (e.g., substance use, bipolar, and psychotic disorders), and inability to complete study assessments. Following screening, 103 older adults did not meet inclusion criteria, four were eligible but declined participation, and three were eligible but lost to follow-up. An additional four participants were excluded post-randomization due to administrative error during eligibility

assessment. Following baseline assessment, 385 participants were randomized to either clinician-delivered BA ($n = 193$) or the lay-delivered DMFB program ($n = 192$).

Procedures

At baseline, all participants completed structured self-report questionnaires and interviewer-administered clinical measures prior to learning their treatment assignment. These instruments captured a range of demographic, clinical, and psychosocial characteristics. Following randomization and the initial treatment session, participants completed the Treatment Rationale Scale with a research coordinator, which assessed their perceptions of the credibility and acceptability of their assigned treatment.

Measures

Independent Variables

Treatment Preferences (RQ1). The main outcome was dichotomized to compare factors associated with participants' treatment preferences, based on their top-ranked selection, following an approach similar to Raue et al. (2011). First-ranked preferences for (a) individual psychotherapy, (b) group counseling, or (c) medication were classified as “active” treatment approaches, while preferences for (d) exercise, (e) religious/spiritual practices, or (f) herbal remedies were classified as “complementary” approaches. Two additional response options—lay-delivered treatment ($n = 3$) and doing nothing ($n = 1$)—were excluded from analysis due to negligible cell sizes.

Treatment Credibility (RQ2). For the second analysis, treatment credibility was measured using the Treatment Rationale Scale (adapted from the Credibility and Expectancy Questionnaire; Devilly & Borkovec, 2000). Each item was rated on a 10-point Likert scale, with higher scores indicating greater perceived credibility, and assessed: (1) how logical the treatment

seemed, (2) confidence that the treatment would successfully eliminate depression, (3) confidence in recommending the treatment to a friend with depression, and (4) willingness to engage with the treatment if severely depressed. Together, these items operationalize treatment credibility as the degree to which a patient perceives a treatment to be logical, suitable, and believable.

Dependent Variables

Race/Ethnicity. Participants were asked separately about their racial and ethnic identities, which were combined into a single racial-ethnic variable with three levels: non-Hispanic White, non-Hispanic People of Color, and Hispanic of any race. The non-Hispanic People of Color group included non-Hispanic Black/African-American, Asian, more than one race, American Indian/Alaska Native, and Native Hawaiian/Pacific Islander participants. Due to this collapsing, findings can only be interpreted at the level of the three groups rather than for specific racial categories. Hispanic ethnicity was treated as a distinct racial-ethnic category consistent with federal Office of Management and Budget (OMB) standards, which classify Hispanic/Latino identity as an ethnicity separate from race (OMB, 2024).

Hamilton Depression Rating Scale. The Hamilton Depression Rating Scale (HAM-D) is a 24-item interviewer-rated scale; total score is calculated as the sum of items 1 through 24, with higher scores indicating greater depression severity (Hamilton, 1960). A passive suicidal ideation variable was created from the HAM-D suicide item, coded as present (score > 0) or absent (score = 0).

Past Treatment Scale. Two items assessed prior treatment history: (1) *Have you received treatment with antidepressants in the past?* and (2) *Have you received counseling or psychotherapy in the past?* Responses were combined into a four-level variable: no prior

treatment ("Neither"), medication only ("Only Medication"), therapy only ("Only Therapy"), and both medication and therapy ("Both").

Charlson Comorbidity Index. Medical comorbidity burden was operationalized using the Charlson Comorbidity Index (CCI) and dichotomized into low ($CCI < 2$) and high ($CCI \geq 2$) comorbidity. The present study applied a clinically meaningful threshold to improve interpretability and capture the distinct burden faced by individuals managing multiple medical conditions (Y.-Z. Wang et al., 2024).

Other Covariates. The following variables were included as covariates. Age was treated as a continuous variable and determined at baseline using birth date. Gender was categorized as male or female. Education was examined both continuously (years of education) and categorically as: high school diploma or less (≤ 12 years), some college or Bachelor's degree (13–16 years), and advanced degree (≥ 17 years). Marital status was categorized as married/partnered or single (including divorced, never married, separated, or widowed). Financial strain was assessed as self-reported difficulty paying for basic needs (e.g., food, housing, medical care, and heating) and categorized as “somewhat hard” to “very hard” versus “not hard at all.” Living situation was dichotomized as living alone versus living with others. Current antidepressant use was coded as yes versus no.

Analytic Sample & Missing Data

The primary analytic sample (RQ1) consisted of 326 participants (BA: $n = 161$; DMFB: $n = 165$), following the exclusion of 59 randomized participants due to missing outcome or predictor data. The secondary aim (RQ2) was examined in a separate subsample, as the outcome variable—treatment credibility—had substantially higher missingness (34.5% of the randomized sample), yielding a reduced analytic sample of 252 participants (BA: $n = 127$; DMFB: $n = 125$).

Participants excluded due to missing data did not differ significantly from the analytic sample on demographic characteristics. Observed differences were primarily due to site-level variation related to investigator error.

Because this investigation is a secondary analysis of data from an existing trial, the sample size is fixed and no a priori power calculations were conducted. Based on the RQ1 analytic sample ($N = 326$), post-hoc power estimates indicate adequate power to detect moderate associations; however, the ability to detect small effects may be limited, and null findings among smaller subgroups should be interpreted with caution. Power is similarly constrained for RQ2 ($N = 252$).

Analytic Approach

Analysis for RQ1: Factors Associated with Treatment Preferences

All analyses were conducted in consultation with two statisticians. Descriptive statistics, including frequencies, proportions, and means with standard deviations, were used to characterize the analytic sample. Distributions of continuous variables were evaluated using histograms, boxplots, and tests of skewness and kurtosis prior to modeling. Bivariate analyses examined unadjusted associations between participant characteristics and treatment preference type (active vs. complementary, as defined above) using cross-tabulations with chi-square tests for categorical variables and Wilcoxon rank sum-tests for continuous variables.

Predictor selection for multivariable models was informed by a combination of bivariate screening and subject matter expertise. Candidate predictor variables were organized according to the Andersen Behavioral Model of Health Services Use (Andersen & Davidson, 2007), which provides a theoretical framework for categorizing factors that influence health service preferences and utilization. Variables were grouped into three domains: predisposing factors

(sociodemographic characteristics including age, gender, education, and race/ethnicity), enabling factors (resources that facilitate or inhibit access, including social support and financial stability), and need factors (clinical characteristics that influence treatment-seeking, including depression severity, suicidal ideation, medical comorbidity burden, and prior treatment experience).

Variables were first evaluated in bivariate analyses, and those demonstrating a statistically significant association with the outcome at $p < .10$ were considered for inclusion in multivariable models. Candidate variables were then reviewed by thesis committee members and biostatisticians to ensure clinical interpretability and theoretical relevance, with final selection decisions grounded in prior literature on treatment preferences among older adults. The final selected demographic predictors were age, gender, race/ethnicity, and education. Clinical variables included depression severity, anxiety diagnosis, suicidal ideation, and prior treatment experience. In the current study's conceptual framework, demographic characteristics represent predisposing factors, while the clinical variables represent need factors. Enabling factors were not included in the final list of variables due to the lack of direct measures to capture these constructs.

To identify multivariable predictors of treatment preference type (active vs. complementary), logistic regression models were estimated in a staged sequence: an unadjusted bivariate model (Model 1), a model adjusted for demographic predictors only (Model 2), a model adjusted for clinical predictors only (Model 3), and a fully adjusted model including both demographic and clinical predictors (Model 4). This staged approach allows for examination of how demographic and clinical factors independently and jointly account for variance in treatment preferences.

Model fit and assumption checks were conducted for all models. Likelihood ratio tests were used to evaluate overall fit, and variance inflation factors (VIF) were examined to assess multicollinearity. All analyses were conducted in R version 4.5.2 (R Core Team, 2025), with statistical significance defined as $p < .05$.

Analysis for RQ2: Treatment Credibility by Intervention Type

For the second aim, mean scores on each item of the Treatment Rationale Scale were compared between the two treatment arms (DMFB vs. BA). Because of the skewed distribution of scores across all four items, Wilcoxon rank-sum tests were used for group comparisons.

Table 1*Bivariate Associations for Treatment Preferences (N = 326)*

Characteristic	Overall ¹	Active ¹	Complementary ¹	p ²
Location	—	—	—	.159
New York	112 (34.4%)	81 (33.3%)	31 (37.3%)	—
Florida	104 (31.9%)	73 (30.0%)	31 (37.3%)	—
Washington	110 (33.7%)	89 (36.6%)	21 (25.3%)	—
Age (years)	69.0 (66.0-75.0)	69.0 (65.0-76.0)	70.0 (66.0-73.0)	.896
Age group	—	—	—	.400
60-69 years	169 (51.8%)	128 (52.7%)	41 (49.4%)	—
70-79 years	120 (36.8%)	85 (35.0%)	35 (42.2%)	—
80+ years	37 (11.3%)	30 (12.3%)	7 (8.4%)	—
Female	273 (83.7%)	202 (83.1%)	71 (85.5%)	.732
Race/Ethnicity	—	—	—	.066
Hispanic, any race	98 (30.11%)	64 (26.3%)	34 (41.0%)	—
Non-Hispanic	—	—	—	—
White	170 (52.1%)	139 (57.2%)	31 (37.3%)	—
Black/African-American	40 (12.3%)	27 (11.1%)	13 (15.7%)	—
Asian	10 (3.1%)	8 (3.3%)	2 (2.4%)	—
More than one race	5 (1.5%)	3 (1.2%)	2 (2.4%)	—
American Indian/Alaska Native	2 (0.6%)	1 (0.4%)	1 (1.2%)	—
Native Hawaiian/Pacific Islander	1 (0.3%)	1 (0.4%)	0 (0.0%)	—
Education (years)	16.0 (13.0-18.0)	16.0 (14.0-18.0)	15.0 (12.0-16.0)	.009
Education level ³	—	—	—	.020
High school diploma or less	71 (21.8%)	44 (18.1%)	27 (32.5%)	—
Some college/Bachelor's degree	161 (49.4%)	124 (51.0%)	37 (44.6%)	—
Advanced degree	94 (28.8%)	75 (30.9%)	19 (22.9%)	—
Married/Partnered	88 (27.1%)	67 (27.7%)	21 (25.3%)	.780
Financial strain ⁴	168 (51.5%)	122 (50.2%)	46 (55.4%)	.488
Lives alone	179 (55.2%)	138 (57.0%)	41 (50.0%)	.328
Depression severity (HAM-D)	18.0 (15.0-22.0)	18.0 (15.0-22.0)	18.0 (15.0-21.0)	.969
Suicidal ideation	49 (15.0%)	42 (17.3%)	7 (8.4%)	.077
Past treatment experience	—	—	—	.002
Neither	74 (22.7%)	45 (18.5%)	29 (34.9%)	—
Only medication	31 (9.5%)	20 (8.2%)	11 (13.3%)	—
Only therapy	47 (14.4%)	35 (14.4%)	12 (14.5%)	—
Both	174 (53.4%)	143 (58.8%)	31 (37.3%)	—
Current antidepressant use	101 (31.0%)	82 (33.7%)	19 (22.9%)	.088
High medical comorbidity burden ⁵	196 (60.1%)	138 (56.8%)	58 (69.9%)	.049
Total	326 (100.00%)	243 (100.0%)	83 (100.0%)	

¹ Mdn (IQR) for continuous; n (%) for categorical, with percentages calculated column-wise² t-test for continuous; chi-square for categorical; bold $p < 0.05$ ³ High school diploma or less (≤ 12 yrs), Some college/Bachelor's degree (12-16 yrs), Advanced degree (≥ 17 yrs)⁴ Difficulty paying for the very basics like food, housing, medical care, and heating (Somewhat to Very hard)⁵ High comorbidity burden (Charles Comorbidity Index Score ≥ 2)

Results

RQ1: Factors Associated with Treatment Preferences

Descriptive Statistics

Sample characteristics and distributions for RQ1 are presented in Table 1. The sample was predominantly female, single, and had at least a high school diploma. The median age was 69 years ($IQR = 66-75$), with a range of 60 to 92 years. Roughly half of the sample experienced difficulty with paying for basic needs (financial strain) and 55.2% lived alone. A majority of the sample ($n = 228$, 69.9%) identified as non-Hispanic (see Table 1). The Hispanic sample ($n = 98$) varied widely in their racial identity, with participants identifying as White ($n_{hisp} = 52$, 53.1%), more than one race ($n_{hisp} = 30$, 30.6%), Black/African-American ($n_{hisp} = 7$, 7.1%), American Indian/Alaska Native ($n_{hisp} = 1$, 1.0%), or unknown/chose not to answer ($n_{hisp} = 8$, 8.2%).

On the 24-item HAM-D rating scale, the sample had a median score of 18 ($IQR = 15-22$) with 53% of the sample meeting criteria for moderate depression, 25.2% with severe depression, and 19.63% with very severe depression (Raue et al., 2022). On the same measure, 15.0% of the sample indicated passive suicidal ideation. Over half (53.4%) of the sample had prior experience in treatments with both antidepressants and psychotherapy before enrolling in the study. One-third (33.3%) of participants were on stable doses (over 12 weeks) of antidepressants at the time of enrollment. 60.1% of participants had a score of 2 or higher on the CCI, indicating a high level of overall medical comorbidity burden within the sample.

Of the 326 participants in the analytic sample, the majority endorsed an active treatment approach as their first-ranked preference ($n = 243$, 74.5%), while approximately one quarter preferred a complementary approach ($n = 83$, 25.5%). Among specific treatment approaches, individual counseling/psychotherapy was by far the most commonly selected first-choice

treatment ($n = 175$, 53.7%). This was followed by exercise ($n = 42$, 12.9%), antidepressant medication ($n = 41$, 12.6%), group counseling/psychotherapy ($n = 27$, 8.3%), religious or spiritual activities ($n = 27$, 8.3%), and herbal remedies ($n = 14$, 4.3%).

Bivariate Statistics

Several demographic and clinical characteristics were significantly associated with treatment preference type in bivariate analyses. Comparing racial-ethnic groups, identifying as non-Hispanic White was significantly associated with preference for active treatment approaches (81.8%), compared to non-Hispanic People of Color (31.0%) and Hispanic participants (34.7%), $\chi^2(2) = 10.03$, $p = .007$. Years of education was also significantly associated with preference type: participants who preferred active treatment had more years of education ($Mdn = 16$, $IQR = 14-18$) than those who preferred complementary approaches ($Mdn = 15$, $IQR = 12-16$), $W = 8176.5$, $p = .009$. Those with a high school education or less were most likely to prefer complementary approaches (38.0%) compared to those with some college (23.0%) or an advanced degree (20.2%), $\chi^2(2) = 7.80$, $p = .02$.

Among clinical variables, participants with high medical comorbidity burden ($CCI \geq 2$, $n = 196$) were more likely to prefer complementary treatment (29.6%) than those with lower comorbidity (19.2%), $\chi^2(1) = 3.89$, $p = .049$. Prior treatment experience was also significantly associated with preference type: participants who had received both therapy and antidepressant treatments previously ($n = 174$) were most likely to prefer active treatment (82.2%), while those with no prior treatment history ($n = 74$) were least likely (60.8%), $\chi^2(3) = 14.35$, $p = .002$. Specifically, prior history with psychotherapy ($n = 221$) was strongly associated with active treatment preference (80.5% with therapy history vs. 61.9% without therapy history; $\chi^2(1) =$

12.07, $p < .001$), as was prior medication history ($n = 205$; 79.5% with antidepressant history vs. 66.1% without antidepressant history; $\chi^2(1) = 6.51, p = .011$).

Age ($W = 9988, p = .897$), gender ($\chi^2(1) = 0.12, p = .732$), depression severity ($W = 10056, p = .969$), presence of passive suicidal ideation ($\chi^2(1) = 3.13, p = .077$), marital or relationship status ($\chi^2(1) = 0.08, p = .780$), living situation ($\chi^2(1) = 0.95, p = .329$), and study location ($\chi^2(2) = 3.68, p = .159$) were not significantly associated with treatment preference type. Unadjusted odds ratios (OR) and 95% confidence intervals (CIs) were also calculated as a first step to multiple logistic regression, presented in Table 2 (Model 1).

Table 2

Unadjusted Bivariate Results (Model 1)

Predictor	Unadjusted OR ¹	95% CI	p
Age (years)	1.01	0.97, 1.05	.67
Gender	—	—	—
Female	1	(Ref)	—
Male	1.20	0.61, 2.50	.61
Race/Ethnicity	—	—	—
Non-Hispanic White	1	(Ref)	—
Non-Hispanic people of color*	0.50	0.25, 0.99	.043
Hispanic, any race**	0.42	0.24, 0.74	.003
Education (years)**	1.10	1.03, 1.18	.006
Depression severity (HAM-D)	1.01	0.96, 1.07	.69
Past treatment experience	—	—	—
Neither	1	(Ref)	—
Only medication	1.17	0.50, 2.87	.72
Only therapy	1.88	0.85, 4.31	.12
Both***	2.97	1.62, 5.48	<.001
Medical comorbidity burden	—	—	—
Low (CCI < 2)	1	(Ref)	—
High (CCI ≥ 2)*	0.57	0.33, 0.96	.037
Suicidal ideation	—	—	—
No suicidal ideation	1	(Ref)	—
Suicidal ideation	2.27	1.03, 5.72	.057

¹* $p < .05$; ** $p < .01$; *** $p < .001$

Abbreviations: OR = odds ratio; CI = confidence interval; CCI = Charlson Comorbidity Index; HAM-D = Hamilton Depression Rating Scale; Ref = reference group.

Multivariable Logistic Regression

Results from the logistic regression models are presented in Tables 3 (Models 2 and 3) and 4 (Model 4). In the demographic-only model (Model 2), race/ethnicity was the only significant predictor. Compared to non-Hispanic White participants, non-Hispanic people of color had approximately half the odds of preferring active treatment, $OR = 0.48$, 95% CI [0.24, 0.98], $p = .041$. The odds ratio was similar between Hispanic and non-Hispanic White participants, which approached but did not reach significance after adjustment for other demographic variables, $OR = 0.53$, 95% CI [0.28, 1.02], $p = .055$. Each additional year of education was associated with 7% increased odds of preferring active treatment, although this association also did not reach statistical significance, $OR = 1.07$, 95% CI [1.00, 1.16], $p = .063$.

In the clinical-only model (Model 3), prior treatment with both therapy and antidepressants was associated with substantially greater odds of preferring active treatment compared to no prior treatment, $OR = 2.76$, 95% CI [1.49, 5.14], $p = .001$. High medical comorbidity ($CCI \geq 2$) was associated with lower odds of preferring active treatment, $OR = 0.57$, 95% CI [0.32, 0.99], $p = .051$, though the estimate was imprecise. Passive suicidal ideation was associated with higher odds of preferring active treatment ($OR = 2.15$, 95% CI [0.95, 5.51], $p = .084$), but with considerable uncertainty.

Table 3*Demographic and Clinical Regression Model (Models 2 and 3)*

Predictor	Model 2: Demographic			Model 3: Clinical		
	OR ^I	95% CI	p	OR ^I	95% CI	p
Age (years)	0.99	0.95, 1.03	.60	—	—	—
Gender	—	—	—	—	—	—
Female	1	(Ref)	—	—	—	—
Male	1.11	0.56, 2.34	.78	—	—	—
Race/Ethnicity	—	—	—	—	—	—
Non-Hispanic White	1	(Ref)	—	—	—	—
Non-Hispanic people of color*	0.48	0.24, 0.98	.041	—	—	—
Hispanic, any race	0.53	0.28, 1.02	.055	—	—	—
Education (years)	1.07	1.00, 1.16	.063	—	—	—
Depression severity (HAM-D)	—	—	—	1.00	0.95, 1.07	.89
Past treatment experience	—	—	—	—	—	—
Neither	—	—	—	1	(Ref)	—
Only medication	—	—	—	1.26	0.52, 3.12	.61
Only therapy	—	—	—	1.56	0.69, 3.65	.30
Both**	—	—	—	2.76	1.49, 5.14	.001
Medical comorbidity burden	—	—	—	—	—	—
Low (CCI < 2)	—	—	—	1	(Ref)	—
High (CCI ≥ 2)	—	—	—	0.57	0.32, 0.99	.051
Suicidal ideation	—	—	—	—	—	—
No suicidal ideation	—	—	—	1	(Ref)	—
Suicidal ideation	—	—	—	2.15	0.95, 5.51	.084

^I*p<.05; **p<.01

Abbreviations: OR = odds ratio; CI = confidence interval; CCI = Charlson Comorbidity Index; HAM-D = Hamilton Depression Rating Scale; Ref = reference group.

In the fully adjusted model (Model 4), only prior treatment with both medication and therapy remained a statistically significant predictor, $OR = 2.14$, 95% CI [1.07, 4.28], $p = .031$. High medical comorbidity burden ($CCI \geq 2$) was not statistically associated with treatment preference in the adjusted model, $OR = 0.57$, 95% CI [0.31, 1.03], $p = .067$. The final model fit was assessed via likelihood ratio test and was statistically significant ($\chi^2(11) = 25.41$, $p = .008$), indicating that the model as a whole explained significantly more variance in treatment preference than did the unadjusted model.

Table 4*Fully Adjusted Model (Model 4)*

Predictor	OR ^I	95% CI	p
Age (years)	1.00	0.96, 1.04	.91
Gender	—	—	—
Female	1	(Ref)	—
Male	1.22	0.59, 2.68	.60
Race/Ethnicity	—	—	—
Non-Hispanic, White	1	(Ref)	—
Non-Hispanic, People of color	0.62	0.30, 1.31	.20
Hispanic, Any race	0.74	0.37, 1.50	.40
Education (years)	1.05	0.97, 1.14	.22
Depression severity (HAM-D)	1.01	0.95, 1.07	.81
Past treatment	—	—	—
Neither	1	(Ref)	—
Medication only	1.16	0.47, 2.97	.75
Therapy only	1.31	0.55, 3.22	.55
Both*	2.14	1.07, 4.28	.031
Medical comorbidity burden	—	—	—
Low (CCI < 2)	1	(Ref)	—
High (CCI ≥ 2)	0.57	0.31, 1.03	.067
Suicidal ideation	—	—	—
No suicidal ideation	1	(Ref)	—
Suicidal ideation	1.90	0.83, 4.93	.15

^I*p<.05

Abbreviations: OR = odds ratio; CI = confidence interval; CCI = Charlson Comorbidity Index; HAM-D = Hamilton Depression Rating Scale; Ref = reference group.

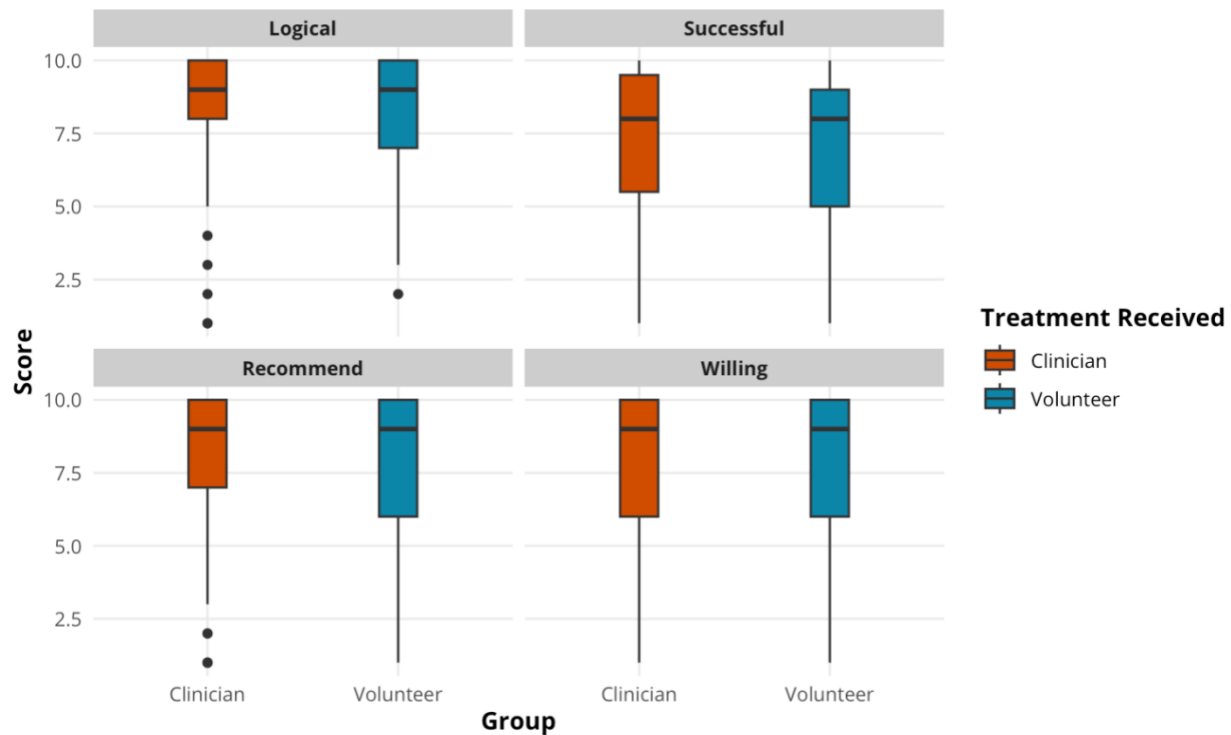
RQ2: Treatment Credibility by Intervention Type

Median scores on each item of the Treatment Rationale Scale were compared between participants randomized to clinician-delivered BA ($n = 127$) and the lay-delivered DMFB program ($n = 125$; total $N = 252$). Across all items, median ratings were high in both treatment arms and did not differ significantly between groups. In both arms, participants rated the logical basis of their assigned treatment similarly (BA: $Mdn = 9$, $IQR = 8-10$; DMFB: $Mdn = 9$, $IQR = 7-10$, $W = 8,728$, $p = .15$). Confidence that the treatment would successfully eliminate depression was also comparable across arms (BA: $Mdn = 8$, $IQR = 5-10$; DMFB: $Mdn = 8$, $IQR = 5-9$; $W =$

8,639, $p = .22$). Ratings of willingness to recommend the treatment to a friend (BA: $Mdn = 9$, $IQR = 7-10$; DMFB: $Mdn = 9$, $IQR = 6-10$; $W = 8,247$, $p = .57$) and willingness to engage with the treatment if severely depressed (BA: $Mdn = 9$, $IQR = 6-10$; DMFB: $Mdn = 9$, $IQR = 6-10$; $W = 8,413$, $p = .39$) were similarly high and did not differ significantly between groups. The distribution of scores across both treatment groups is displayed in Figure 1.

Figure 1

Boxplot of Treatment Rationale Scores by Treatment Group



Note. Participants were asked: (1) how logical does this treatment seem to you? (2) how confident are you that this treatment will be successful in eliminating your depression? (3) how confident would you be in recommending this treatment to a friend with depression? and (4) if you were extremely depressed, would you be willing to undergo such treatment?

Discussion

Summary of Findings

The present study examined predictors of treatment preference for depression among older adults and compared participant-rated credibility of a lay-delivered intervention versus a clinician-delivered intervention following an initial session.

RQ1: Factors Associated with Treatment Preferences

Prior Treatment Experience. H1 was partially supported. Participants with prior experience receiving both psychotherapy and antidepressant medication had significantly greater odds of preferring active treatment in both bivariate and fully adjusted models, which was consistent with predictions based on past literature (Gum et al., 2006; Raue et al., 2011). However, prior experience with only antidepressants or only psychotherapy was not significantly associated with treatment preference in the fully adjusted model. This suggests that exposure to a combination of treatment modalities potentially indicates a greater overall engagement with formal mental healthcare, which in turn may influence preference for evidence-based active treatments.

Depression Severity. Depression severity (H2) was not significantly associated with treatment preference in either bivariate or adjusted analyses, and this null finding may be explained by the restriction of range in HAM-D scores with this sample (see Limitations).

Education. H3 was partially supported. Higher levels of education predicted active treatment preference in bivariate analyses and in the demographic-adjusted model, consistent with hypotheses. This association, however, was attenuated in the fully adjusted model, which is likely due to collinearity with race and ethnicity. Conceptually, the education effect may be a proxy for health literacy: individuals with more years of formal education may have greater

familiarity with psychotherapy and pharmacotherapy as legitimate treatment options, and greater confidence in navigating the healthcare system to access them.

Race/Ethnicity. Race/ethnicity (H4) was significantly associated with preference in bivariate analyses but did not remain significant after adjustment for other demographic and clinical variables, resulting in conservative estimates of their effects.

Medical Comorbidity. E1, whether high medical comorbidity is associated with active treatment preference, was not supported in the final model. High medical comorbidity was associated with lower odds of preferring active treatment ($OR = 0.57$, 95% CI [0.31, 1.03]), although the estimate was imprecise and it did not reach the predefined threshold of $p < .05$. Individuals with high comorbidity burden face competing treatment demands, potential drug interactions, and elevated fatigue, all of which may reduce the perceived feasibility of engaging in psychotherapy or pharmacotherapy (Chi et al., 2017).

RQ2: Treatment Credibility by Intervention Type

Participants randomized to the lay-delivered DMFB program reported levels of treatment credibility that were comparable to those reported by participants randomized to the clinician-delivered BA intervention across all four dimensions of the Treatment Rationale Scale following a single session. Ratings were similarly high in both arms, suggesting that initial exposure to either intervention was sufficient to establish comparable perceptions of credibility and acceptability. These findings have important implications for the feasibility of task-sharing depression treatment to lay providers, which has been proposed as a scalable strategy for addressing the mental health treatment gap among older adults (Javadi et al., 2017). If such interventions are perceived as credible early in treatment, concerns about patient acceptance and engagement may be less of a barrier to implementation than previously anticipated (Le et al.,

2022). This supports the potential role of task-sharing approaches in addressing workforce shortages in geriatric mental health care.

Theoretical Framework

These findings can be interpreted within Andersen's Behavioral Model of Health Services Utilization, which posits that healthcare utilization (and by extension, treatment preference) is shaped by predisposing characteristics (e.g., demographics, prior experience), enabling resources (not evaluated in this study), and need factors (e.g., clinical severity, comorbidity; Andersen & Davidson, 2007). The results of this study correspond with this framework to a moderate degree. Predisposing factors such as prior treatment experience represent meaningful predictors, while the need factor of depression severity did not, possibly due to methodological constraints. Comorbidity burden, which can be conceptualized as an additional need factor, showed a trend that warrants future research, especially with the potential direction of the negative relationship established. Enabling factors (e.g., personal, familial, and community-level resources) were not captured in the final model. Whether enabling factors explain treatment preferences directly or rather play a larger role in shaping access and utilization would remain an open question for future research.

Clinical Implications

There are several implications for clinical practice that can be gathered from this study. First, clinicians should avoid making assumptions about treatment preference based on race/ethnicity or other demographic characteristics prior to making recommendations. It might be more useful to assess preferences at the individual level through a process of shared decision-making (Matthews et al., 2021; Raue, Schulberg, et al., 2019). Second, whether a patient has previously received both psychotherapy and pharmacotherapy appears to be a meaningful signal

of preference for active treatment, and perhaps should be routinely assessed as part of shared decision-making. Third, the comparable credibility ratings for lay-delivered and clinician-delivered treatments support the potential scalability of task-sharing interventions in older adult depression care like DMFB, particularly in settings where access to licensed providers is limited.

Limitations

Several limitations should be noted for this study. First, HAM-D scores in this sample were restricted in range, which likely biased associations between depression severity and treatment preference toward the null. Studies enrolling participants across a wider severity spectrum would provide a stronger test of these associations. Second, the collinearity between race/ethnicity and education limits the ability to understand the independent contribution of each variable. The adjusted ORs for both should be understood as conservative estimates. Third, the study used a fixed sized sample that may have been underpowered to detect small effects, particularly given the relatively small number of participants preferring complementary approaches ($n = 84$) and the number of predictors in the fully adjusted model ($df = 13$), raising concern about potential overfitting. Fourth, treatment preference was measured as a stated preference rather than actual treatment-seeking behavior or attitudes. It cannot be assumed that stated preferences translate directly to real-world choices and beliefs. Fifth, the study used a cross-sectional study design, and preference was measured at a single time point following one session. It is possible that preferences shift with greater treatment exposure, so longitudinal designs would be better suited to capturing preference stability and change over time. Finally, participants assigned to the lay-delivered intervention consented to participate in a study involving such approaches, which may have introduced selection bias and resulted in more favorable initial perceptions of lay-delivered care.

Future Directions

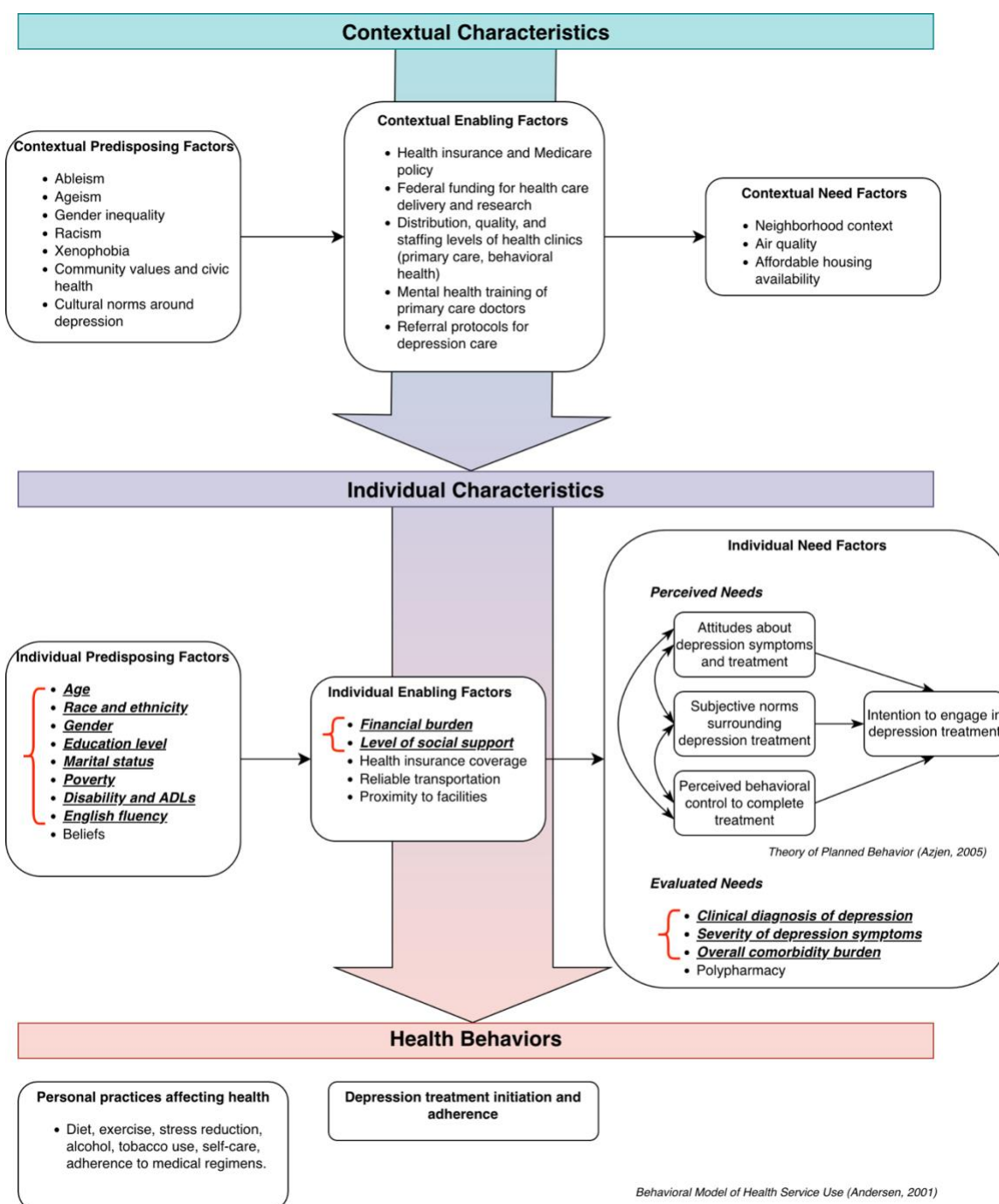
Future research should examine whether prior treatment experience mediates the relationship between sociodemographic characteristics and preference, which could reveal whether disparities in access drive observed group-level differences. Longitudinal studies tracking preference across the course of treatment would help clarify whether early preferences predict engagement and outcomes. Further investigation is also needed to clarify the relationship between medical comorbidity and treatment preferences. Although no clear association was observed in the fully adjusted model, replication using a similar operationalization of the Charlson Comorbidity Index would help establish whether the trend observed here holds across other samples and settings. Qualitative investigation of the treatment decision-making process among older adults who prefer complementary approaches, particularly those with high comorbidity burden, would provide important context for the quantitative findings reported here.

Conclusion

This thesis contributes to an evolving literature on treatment preference in late-life depression. I have identified prior treatment experience as a clinically relevant correlate of preference, with medical comorbidity playing a potential role that warrants further investigation. The finding that a lay-delivered intervention earned a similar level of credibility to a clinician-delivered one after a single session supports the feasibility of task-sharing models of care for older adults. Together, these findings demonstrate the importance of incorporating patient preferences into the design of depression interventions for older adults and suggest that attention to acceptability and early treatment credibility may support the broader implementation and scalability of mental health services in this population.

Appendix

Conceptual Model



Note. Brackets indicate variables included in the present study.

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