



Family support is important for mitigating the mental health consequences of loneliness among Black Americans at midlife: Results from a longitudinal mediation analysis

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ARTICLE INFO

Keywords:

Loneliness
Social isolation
Stress
Psychological
Depression
Black or African American
Middle aged
Structural equation modeling

ABSTRACT

Purpose: Social connectedness influences mental health, yet pathways through loneliness versus social isolation remain underexamined among Black Americans. This study examines these mediating pathways.

Methods: We analyzed longitudinal data (between 2005–2006 and 2016–2017) among Black Americans (N = 592) in the Midlife in the United States (MIDUS), Milwaukee, WI. Social connectedness was measured across six dimensions: neighborhood social cohesion, social integration, support from family, support from friends, social contribution, and community contribution. Mediators included loneliness and social isolation (frequency of social contact). Outcomes were psychological distress (Kessler-6 Scale) and depression diagnosis (7-item binary measure assessing the presence of depressive symptoms over a two-week period). We used structural equation modeling with inverse probability weighting to examine both direct and indirect effects.

Results: Loneliness significantly predicted both psychological distress ($\beta = 1.76$, $p < 0.001$) and depression ($aOR = 2.14$, $p = 0.010$). Social isolation did not significantly predict either outcome. Support from family showed the strongest total protective effects on psychological distress (total $\beta = -2.477$, $p < 0.05$) and depression (total $aOR = 0.208$, $p < 0.01$), primarily driven by substantial indirect effects through reduced loneliness (psychological distress: $\beta = -1.244$, $p < 0.01$; depression: $aOR = 0.538$, $p < 0.05$). Support from family also showed a significant direct protective effect on depression ($aOR = 0.301$, $p < 0.05$), but not on psychological distress.

Conclusions: Support from family reduced both psychological distress and depression primarily through its role in reducing loneliness, with an additional direct protective effect on depression. Programs and policies that strengthen family support are imperative to promote mental health in this population.

1. Introduction

Social connectedness is a multifaceted concept that includes both the structural aspects of social relationships, such as network composition and how often people interact, and the functional and qualitative aspects, like perceived support quality, relationship satisfaction, and a sense of belonging in social environments (Holt-Lunstad, 2022; Holt-Lunstad et al., 2017; Kawachi and Berkman, 2014). For Black Americans, social connectedness holds special historical and current significance. Black communities have long developed extended kinship systems (Taylor et al., 2022), faith-based networks (Lincoln and Mamiya, 1990; Neal-Stanley et al., 2024), and strong neighborhood ties (English et al., 2014) as key protective tools against systemic racism

and oppression. However, these traditional sources of social connectedness have been eroding for years under multiple overlapping forces. For example, residential segregation concentrates poverty while limiting access to resources (Williams and Collins, 2001); mass incarceration breaks family and community bonds (Wakefield, 2022); gentrification pushes out long-standing residents and dissolves cohesive networks (Fullilove, 2013); and demographic shifts project that by 2060, over 15% of Black women and 13% of Black men will lack any living immediate family members (Verdery and Margolis, 2017). Despite these challenges, social connectedness continues to play a vital role in reducing negative mental health risks among Black Americans (Gilbert et al., 2022; Hsu et al., 2025; Ransome et al., 2023; Rose et al., 2019).

Social isolation and loneliness are two related yet distinct pathways

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<https://doi.org/10.1016/j.jpsychires.2026.08.019>

Received 16 March 2026; Received in revised form 10 August 2026; Accepted 13 August 2026

Available online 19 August 2026

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through which social connectedness affects mental health across diverse cultural contexts (Kim et al., 2024; Wang et al., 2025). Social isolation is the objective lack of social contact, characterized by limited interactions, small networks, and low community engagement, which primarily impacts mental health by reducing access to support and stress relief through social interactions (Cornwell and Waite, 2009b; Umberson et al., 2010). Conversely, loneliness refers to the subjective feeling of a gap between desired and actual social relationships, influencing mental health through cognitive and emotional processes, such as heightened awareness of social threats, negative perceptions of social interactions, and biological stress responses (Hawkey and Cacioppo, 2010; Perlman et al., 1981). These pathways can operate independently; individuals may feel lonely despite having large social networks or maintain mental well-being with minimal social contact, showing that objective and subjective factors uniquely affect mental health outcomes (Cornwell and Waite, 2009b). For Black Americans, both pathways require careful attention. Structural issues like mass incarceration and residential displacement create objective social isolation by physically separating families and disrupting neighborhoods (Taylor, 2021), while experiences of racial marginalization and discrimination can heighten feelings of loneliness even when socially connected (Taylor et al., 2025; Williams and Mohammed, 2009).

Psychological distress and depression are major public health problems among Black American communities. Black Americans report higher levels of psychological distress than white Americans on many national surveys, yet they have lower rates of diagnosed clinical depression (Keyes, 2009; LaMotte et al., 2023). This pattern reflects structural inequities in healthcare access, systemic barriers to treatment, cultural differences in how distress is expressed and recognized (Bailey et al., 2019; Williams and Mohammed, 2009). Additionally, Black Americans in midlife and beyond face layered vulnerabilities: they cope with common age-related challenges like bereavement, shrinking social networks due to retirement, and chronic health conditions, while also enduring lifelong exposure to racial discrimination, economic hardships, and neighborhood environments that limit social opportunities and access to mental health resources (Taylor et al., 2023; Wilson and O'Connor, 2022). Importantly, both outcomes can be improved through interventions that enhance social connectedness and support (De Risio et al., 2025; Zagic et al., 2022), providing practical targets for intervention.

Critical knowledge gaps remain in understanding how social connectedness influences mental health among Black Americans. Specifically, there is limited research on how both loneliness and social isolation contribute to the path towards poor health. For example, most studies have examined social connectedness as a unidimensional construct rather than investigating how dimensions, such as family/friend support, social integration, and neighborhood cohesion, are involved. Those dimensions may operate through distinct mechanisms (Holt-Lunstad, 2022). Second, the limited existing research has been conducted predominantly in general populations or majority-white cohorts, raising fundamental questions about generalizability to Black Americans whose social experiences are shaped by unique historical, structural, and cultural contexts (Ransome et al., 2023; Wickramaratne et al., 2022). These gaps are particularly pronounced for Black Americans at midlife and beyond, who navigate social transitions shaped by both universal developmental changes and race-specific factors (Santini et al., 2020).

This study fills these gaps by testing whether loneliness and social isolation are mediators between pathways from six aspects of social connectedness to two mental health outcomes in a longitudinal sample of Black American adults in Milwaukee, Wisconsin. The city of Milwaukee is a unique environment to examine these factors among Black people because the city exemplifies many of the structural conditions that many Black Americans face in urban centers. These characteristics of Milwaukee, WI include extreme racial segregation, concentrated poverty, and ongoing economic disinvestment (Alexander, 2025;

Darden et al., 2010). We hypothesized that: (1) all six dimensions of social connectedness would have direct protective effects on psychological distress and depressive symptoms; (2) both loneliness and social isolation would be partial and significant mediators of these relationships.

2. Materials and methods

2.1. Participants

This study analyzed longitudinal data from the Milwaukee subsample of the MIDUS (Midlife in the United States) study. Our primary analyses included participants at both Milwaukee Wave 2 (2005–2006; baseline $n = 592$) and Wave 3 (2016–2017; follow-up $n = 398$), representing an attrition rate of 32.8% over approximately 11 years. The Milwaukee study specifically recruited Black American residents from the greater Milwaukee metropolitan area to examine health disparities and social determinants in this population. Study data and documentation are available through the Inter-university Consortium for Political and Social Research (ICPSR) and associated publications (Barry, 2014; Institute on Aging & University of Wisconsin-Madison, 2022; Radler and Ryff, 2010).

All participants provided informed consent for their data to be used in statistical analyses. The study protocol has been approved by the institute's ethical review committee.

2.2. Measures

Measures were drawn from two waves of data collection. Social connectedness exposures, mediators of isolation and loneliness, and covariates were assessed at Wave 2 (2005–2006), representing baseline conditions. Mental health outcomes (psychological distress and depression) were assessed at Wave 3 (2016–2017), approximately 11 years after baseline. [Supplementary Table 1](#) summarized all the measures used in this study and their reliability statistics.

2.3. Exposures—social connectedness

We assessed social connectedness across six distinct dimensions using validated scales developed for the MIDUS study, with detailed psychometric properties reported in previous MIDUS publications (Keyes, 1998; Ryff and Keyes, 1995). The six social connectedness dimensions are: (1) Neighborhood Social Cohesion, measured with an eight-item validated scale (Keyes, 1998) that evaluates neighborhood safety, trust, and quality on a 4-point scale (Cronbach's $\alpha = 0.83$); (2) Social contribution, assessed with three items on a 7-point validated scale that examines community role involvement (Brissette et al., 2000) (Cronbach's $\alpha = 0.53$); (3) Community contribution, evaluated with six validated items on a 4-point scale that measures perceived societal contributions (e.g., “Many people come to you for advice”) (Keyes, 1998) (Cronbach's $\alpha = 0.82$); (4) Support from family and (5) friends, measured using parallel four-item validated scales capturing emotional support on a 4-point scale (Walen and Lachman, 2000) (family support: Cronbach's $\alpha = 0.82$; friend support: Cronbach's $\alpha = 0.88$); and (6) Social integration, assessed with a three-item validated scale measuring sense of belonging and community connection on a 7-point scale (Keyes, 1998) (Cronbach's $\alpha = 0.58$). For all measures, items were reverse-coded as necessary so that higher scores indicated greater levels for each dimension. We created a composite score for each social connectedness measure using structural equation modeling (SEM) with maximum-likelihood estimation for missingness (MLMV) (Maydeu-Olivares, 2017).

2.4. Mediators—loneliness and social isolation

We assessed loneliness using a single-item question: “During the past

30 days, how much of the time did you feel lonely?” with a 5-point response scale (0 = none of the time to 4 = all of the time), where higher scores indicated more frequent loneliness. Research indicates that single-item loneliness assessments, such as this one, exhibit good sensitivity in detecting loneliness (Shiovitz-Ezra and Ayalon, 2012) and correlate strongly with the UCLA Loneliness Scale (Kotwal et al., 2022; Mund et al., 2023).

We calculated a social isolation score based on interaction frequency with family, friends, and neighbors. Participants rated contact on an 8-point scale for family and friends, and a 6-point scale for neighbors. Each item was standardized, reverse-coded, and summed to reflect social isolation, indicating less contact. This method follows established techniques (Cornwell and Waite, 2009a; Steptoe et al., 2013), with proven validity and reliability (Cornwell and Waite, 2009a; Coyle and Dugan, 2012).

2.5. Outcomes – psychological distress and depressive symptoms

We measured psychological distress using the 6-item Kessler Screening Scale for Psychological Distress (Kessler et al., 2002). The six questions ask respondents how frequently they experienced specific negative emotions in the past 30 days: feeling “so sad nothing could cheer you up,” “nervous,” “restless or fidgety,” “hopeless,” “that everything was an effort,” and “worthless.” Each question is scored on a 5-point scale (0 = none of the time to 4 = all of the time), with total scores ranging from 0 to 24 (Cronbach's $\alpha = 0.86$). Higher scores reflect greater psychological distress.

We assessed depression with a binary measure where participants indicated if they experienced core symptoms like depressed mood and anhedonia, aligning with diagnostic criteria for major depressive disorder (Kessler and Walters, 1998; Spitzer et al., 1992). We used this measure because continuous scores had limited variation, with most reporting no symptoms, making continuous analysis less useful (Tomitaka et al., 2017).

2.6. Covariates

We included variables such as age (centered around the mean), sex (male, female), and education level (less than high school, high school graduate, some college, college graduate). Employment status was divided into four groups: full-time, retired, unemployed, and other (including homemakers, students, individuals on leave, and those with disabilities). Marital status was classified as married, previously married, or never married. Neighborhood factors included years at the current residence and homeownership status (yes/no). Socioeconomic status was measured by annual household income from all sources (a continuous variable in \$1000 increments). Self-rated physical health was categorized as poor/fair, good, or very good/excellent. Covariates were selected based on theory and previous empirical studies (Bourdieu, 1986; Fujiwara and Kawachi, 2008; Harpham, 2008; Lin, 1999).

2.7. Statistical analyses

We performed descriptive analyses using means and standard deviations for continuous variables, medians and interquartile ranges for non-normal data (such as income), and proportions for categorical variables. Variance inflation factors (VIFs) were computed to assess multicollinearity, and variables with VIFs of 5.0 or higher were excluded from the models, as this indicates problematic multicollinearity (Kim, 2019).

To address potential bias from non-random attrition between waves, we created stabilized inverse probability weights (IPW) using multiple imputation to manage missing covariate data. The denominator model included variables with moderate to strong links to attrition ($p < 0.20$): spirituality, age, work status, social contribution, self-rated physical health, social integration, friend support, sex, marital status, education,

and social isolation. The numerator model contained the strongest predictors of attrition ($p < 0.001$) along with the main exposure variable: spirituality, age, work status, and social contribution (Cole and Hernán, 2008). Since there were no extreme weights, the final weights, using the untrimmed approach, had a mean of 1.05 and ranged from 0.56 to 4.13 (see Supplementary Materials for full details of IPW construction).

We used structural equation modeling (Ullman and Bentler, 2012) to analyze the direct and indirect effects of six measures of social connectedness (neighborhood social cohesion, social contribution, community contribution, support from family, support from friends, and social integration) on mental health outcomes (psychological distress and depressive symptoms) through two proposed mediators (loneliness and social isolation). The models included direct paths from each social connectedness measure to both mediators and outcomes, as well as paths from mediators to outcomes. All models were adjusted for demographic, socioeconomic, health, and psychosocial covariates and used inverse probability weights to correct for attrition bias. We calculated indirect effects with the product-of-coefficients method (Leth-Steensen and Gallitto, 2016). We standardized all continuous variables into z-scores. We evaluated model fit using the Akaike Information Criterion (AIC) and the Bayesian Information Criterion (BIC), as our models incorporate inverse probability weights and observed-variable specifications (Dhakal et al., 2024; Huang, 2017). All analyses were performed using STATA software (College Station, TX), with statistical significance set at $p < 0.05$ (two-tailed).

3. Results

The baseline sample (see Table 1) included 592 participants with a mean age of 55.4 years ($SD = 12.5$). Women accounted for nearly two-

Table 1
Baseline sociodemographic characteristics of the participants (N = 592).

Variable	Statistics
Mean age (SD)	55.4 (12.5)
Sex	
Male	221 (37.3%)
Female	371 (62.7%)
Marital status	
Married	175 (29.6%)
Previously married	244 (41.2%)
Never married	173 (29.2%)
Education	
Below high school	114 (19.3%)
Completed high school	215 (36.2%)
Some college	183 (30.9%)
College or above	79 (13.3%)
Unknown	1 (0.2%)
Working status	
Full-time employed	305 (51.5%)
Retired	114 (19.3%)
Unemployed or unknown	173 (29.2%)
Year(s) living in the current neighborhood (mean, SD)	9.8 (10.5)
Home ownership	266 (44.9%)
Median annual income (per 1000 dollars, IQR)	28.0 (11.7–57.4)
Self-rated physical health	
Poor/Fair	207 (35.0%)
Good	177 (29.9%)
Very good/Excellent	208 (35.1%)
Mean Social Connectedness Indicators (SD)	
Neighborhood Social Cohesion (NHSC) (possible range: 0–24)	17.0 (4.9)
Social Contribution (SOCIALCON) (possible range: 0–18)	12.4 (3.9)
Contribution to Community (CONTCOM) (possible range: 0–18)	9.6 (2.7)
Support from Family (SUPPORTFAM) (possible range: 0–12)	9.6 (2.7)
Support from Friends (SUPPORTFR) (possible range: 0–12)	8.4 (3.4)
Social Integration (SOCIALINT) (possible range: 0–18)	13.0 (3.7)
Loneliness (possible range: 1–5)	1.8 (1.1)
Social isolation (possible range: 0–19)	5.4 (3.1)
Psychological distress (possible range: 0–24)	4.6 (5.0)
Depression diagnosis	69 (11.7%)

thirds of the group (62.7%). Most had been previously married (41.2%), completed high school (36.2%), and worked full-time (51.5%). Participants' average length of residence in their current neighborhoods was 9.8 years (SD = 10.5), with fewer than half owning homes (44.9%). The median household income was \$28,000 (interquartile range: \$11,700–\$57,400). [Supplementary Table 2](#) presents wave-specific descriptive statistics and comparisons of attrition. Between Wave 2 and Wave 3, participants were significantly older (51.6 vs. 61.1 years, $p < 0.001$), less likely to be employed full-time (51.9% vs. 40.1%, $p < 0.001$), and reported worse self-rated health ($p = 0.001$). Social connectedness dimensions were largely stable across waves, with the exception of social contribution, which declined modestly (15.4 vs. 14.7, $p = 0.024$), and family support, which also showed a small decline (9.9 vs. 9.5, $p = 0.028$).

Correlation analyses showed significant links among measures of social connectedness, loneliness, social isolation, and mental health outcomes (see [Table 2](#)). Social connectedness dimensions were positively intercorrelated, ranging from $r = 0.042$ to $r = 0.339$, with the strongest association between support from family and friends ($r = 0.339$, $p < 0.05$). Correlations between social connectedness dimensions and the mediators were modest, reflecting their theoretical and empirical distinctiveness. Social connectedness captures behavioral and perceptual aspects of relationships, while loneliness reflects a subjective psychological state and social isolation reflects contact frequency ([Cornwell and Waite, 2009a,b](#); [Valtorta et al., 2016](#)). Consistent with this distinction, loneliness and social isolation shared only a modest positive correlation ($r = 0.166$, $p < 0.05$, ~3% shared variance), supporting their treatment as distinct mediating pathways and aligning with prior literature ([Santini et al., 2020](#)). Multicollinearity diagnostics confirmed these measures could be analyzed together, with all VIFs between 1.23 and 2.64 (average VIF = 1.61), well below the threshold of 5.0 ([Supplementary Table 3](#)).

[Table 3](#) (top panel) presents paths from six social connectedness dimensions to loneliness and social isolation. Support from family and support from friends were significant predictors of both mediators. For loneliness, support from family showed the strongest negative association ($\beta = -0.708$, $p < 0.001$, 95% CI: -1.024 , -0.393), followed by support from friends ($\beta = -0.273$, $p = 0.034$, 95% CI: -0.525 , -0.021). For social isolation, support from friends had the strongest negative association ($\beta = -0.312$, $p < 0.001$, 95% CI: -0.405 , -0.220), followed by support from family ($\beta = -0.244$, $p = 0.004$, 95% CI: -0.410 , -0.078). Social integration also significantly predicted social isolation ($\beta = -0.148$, $p = 0.020$, 95% CI: -0.273 , -0.023) but not loneliness ($\beta = -0.111$, $p = 0.561$). The remaining social connectedness dimensions did not significantly predict either mediator.

[Table 3](#) (bottom panel) displays the pathways to psychological distress and depression diagnosis. Loneliness significantly predicted both outcomes: psychological distress ($\beta = 1.756$, $p < 0.001$, 95% CI: 1.082, 2.430) and depression (adjusted odds ratio [aOR] = 2.138, $p = 0.010$, 95% CI: 1.204, 3.797). In contrast, social isolation did not significantly predict either outcome: psychological distress ($\beta = -0.252$,

$p = 0.579$) or depression (aOR = 0.506, $p = 0.192$). Notably, most dimensions of social connectedness did not show significant direct effects on mental health outcomes. The exception was support from family, which significantly lowered the odds of depression diagnosis (aOR = 0.301, $p = 0.042$, 95% CI: 0.095, 0.958), although its direct effect on psychological distress was not significant ($\beta = -1.295$, $p = 0.157$). Social contribution showed a marginally significant impact on psychological distress ($\beta = -1.277$, $p = 0.054$). All other direct pathways from social connectedness to outcomes were not significant (all $p > 0.21$). The full pathways and their statistics are summarized in [Fig. 1](#).

[Table 4](#) presents the standardized direct, indirect, and total effects of social connectedness on mental health outcomes through the two mediators. For psychological distress, support from family showed the strongest total effect (total $\beta = -2.477$, $p < 0.05$), which was primarily driven by an indirect effect through loneliness ($\beta = -1.244$, $p < 0.01$). Social contribution also demonstrated a significant total effect (total $\beta = -1.325$, $p < 0.05$), though the indirect effect through loneliness was modest and insignificant ($\beta = -0.046$). Support from friends showed a significant indirect effect through loneliness ($\beta = -0.479$, $p < 0.05$), but the total effect was not significant (total $\beta = -0.703$). The indirect effects through social isolation were negligible for all social connectedness dimensions, ranging from $\beta = -0.003$ to $\beta = 0.079$. For depression, support from family showed the strongest effects. The direct effect was aOR = 0.301 ($p < 0.05$), the indirect effect through loneliness was aOR = 0.538 ($p < 0.05$), and the total effect was aOR = 0.208 ($p < 0.01$), indicating substantial protective effects operating both directly and through reduced loneliness. The indirect effects through social isolation were minimal across all social connectedness dimensions, with odds ratios ranging from 0.101 to 1.213. None of the other social connectedness dimensions showed significant total effects on depression diagnosis.

For the psychological distress model: AIC = 4651.78, BIC = 4840.27 (log-likelihood = -2282.89 , $df = 43$). For the depression model: AIC = 3242.68, BIC = 3426.78 (log-likelihood = -1579.34 , $df = 42$). As AIC and BIC are comparative rather than absolute fit indices, they indicate a well-specified, parsimonious model rather than confirming absolute goodness-of-fit. This was further supported by joint significance tests: social connectedness dimensions were jointly associated with loneliness ($\chi^2(3) = 26.20$, $p < 0.001$) and social isolation ($\chi^2(3) = 72.87$, $p < 0.001$), and the omnibus tests for psychological distress ($\chi^2(5) = 44.53$, $p < 0.001$) and depression ($\chi^2(5) = 12.96$, $p = 0.024$), collectively indicate that the specified pathways provided meaningful explanatory power.

4. Discussion

Four key findings have emerged from this study. First, loneliness consistently mediated the relationships between social connectedness and both psychological distress and depression, while social isolation showed negligible mediation effects across all dimensions. Second,

Table 2
Social connectedness measures and mental health outcomes correlations (N = 592).

1	2	3	4	5	6	7	8
Neighborhood Social Cohesion	Social Contribution	Contribution to Community	Support from Family	Support from Friends	Social Integration	Loneliness	Social Isolation
1.000							
0.059	1.000						
0.195*	0.051	1.000					
0.126	-0.014	0.121	1.000				
0.157*	0.053	0.222*	0.339*	1.000			
0.223*	0.042	0.185*	0.215*	0.150*	1.000		
-0.124	-0.050	-0.123	-0.339*	-0.266*	-0.151*	1.000	
-0.145*	-0.008	-0.189*	-0.266*	-0.387*	-0.195*	0.166*	1.000

Note: * p -value < 0.05.

Table 3

Direct and indirect effects of social connectedness on mental health outcomes through loneliness and social isolation from the structural equation modeling results (N = 592).

Paths to Mediators						
Predictor	Paths to Loneliness			Paths to Social Isolation		
	β	p-value	95% CI	β	p-value	95% CI
NHSC	−0.185	0.305	(−0.540, 0.169)	−0.110	0.334	(−0.334, 0.114)
SOCIALCON	−0.026	0.588	(−0.121, 0.068)	0.010	0.711	(−0.043, 0.064)
CONTCOM	−0.124	0.392	(−0.409, 0.160)	−0.106	0.161	(−0.254, 0.042)
SUPPORTFAM	−0.708	<0.001	(−1.024, −0.393)	−0.244	0.004	(−0.410, −0.078)
SUPPORTFR	−0.273	0.034	(−0.525, −0.021)	−0.312	<0.001	(−0.405, −0.220)
SOCIALINT	−0.111	0.561	(−0.484, 0.262)	−0.148	0.020	(−0.273, −0.023)
Paths to Outcomes						
Predictor	Psychological Distress			Depression		
	β	p-value	95% CI	OR	p-value	95% CI
LONELY	1.756	<0.001	(1.082, 2.430)	2.138	0.010	(1.204, 3.797)
SOCIALISO	−0.252	0.579	(−1.140, 0.636)	0.506	0.192	(0.181, 1.409)
NHSC	−0.010	0.988	(−1.274, 1.255)	1.430	0.599	(0.377, 5.418)
SOCIALCON	−1.277	0.054	(−2.576, 0.022)	0.428	0.218	(0.111, 1.649)
CONTCOM	0.241	0.701	(−0.989, 1.471)	0.496	0.315	(0.127, 1.946)
SUPPORTFAM	−1.295	0.157	(−3.086, 0.497)	0.301	0.042	(0.095, 0.958)
SUPPORTFR	−0.302	0.442	(−1.071, 0.467)	1.700	0.215	(0.735, 3.933)
SOCIALINT	0.356	0.630	(−1.092, 1.804)	1.843	0.269	(0.623, 5.451)

Abbreviations: NHSC, Neighborhood Social Cohesion; SOCIALCON, Social Contribution; CONTCOM, Community Contribution; SUPPORTFAM, Support from Family; SUPPORTFR, Support from Friends; SOCIALINT, Social Integration.

Note: Models adjusted for age, sex, spirituality, religiosity, education, marital status, employment status, self-rated physical health, home ownership, income, and years living in current residence. All models used inverse probability weights and clustered standard errors by census tract (n = 49 clusters).

support from family emerged as the strongest protective factor against depression (direct aOR = 0.301, $p < 0.05$), with the strongest total effects on both psychological distress (total $\beta = -2.477$) and depression (total aOR = 0.208), primarily driven by indirect effects through reduced loneliness. Third, support from friends also demonstrated significant mediation of the relationship between loneliness and psychological distress ($\beta = -0.479$, $p < 0.05$), while social contribution showed a significant total protective effect ($\beta = -1.325$, $p < 0.05$) through pathways not captured by our mediators. These findings underscore that subjective experiences of loneliness, rather than objective structural isolation, may serve as the critical psychological mechanism linking social connectedness to mental health among midlife Black Americans.

The consistent protective role of family support against both psychological distress and depression aligns with extensive research documenting the central importance of family relationships in Black American communities (Priest et al., 2020; Taylor et al., 2015). Family support has been identified as a particularly salient protective factor for Black Americans, who often maintain strong extended family networks that provide emotional, instrumental, and social resources in the face of structural adversities and discrimination (Lincoln et al., 2013; Taylor et al., 2021). These family networks often extend beyond nuclear family boundaries to include fictive kin and multi-generational support systems, serving as primary sources of resilience and coping resources (Nguyen et al., 2016). The strong mediating associations through loneliness suggest that family support operates by fostering a fundamental sense of belonging and emotional security that directly counters feelings of isolation. This protective mechanism may be especially critical for Black Americans, who may experience social marginalization and discrimination in broader social contexts, making family connections a vital source of validation, understanding, and unconditional acceptance that buffers against the psychological toll of these experiences (Priest et al., 2020; Qin et al., 2020).

Both support from friends and social contribution demonstrated partial but significant protective associations with psychological distress, though through different pathways. The overall protective influence of support from friends was substantially smaller than support from family (total effects: -0.703 vs. -2.477), reflecting evidence that family relationships have stronger and more enduring positive effects on psychological well-being than friendships due to differences in emotional closeness and lifetime stability (Antonucci et al., 2014). This

limited impact of friend support may be particularly pronounced among midlife adults, who experience greater fluctuations in their peripheral friendship networks due to geographic moves, changing life priorities, and shifting social roles, resulting in less consistency and available support over time compared to the stable presence of family (Bruine de Bruin et al., 2020; Lin et al., 2012). For Black Americans, these network disruptions may be worsened by structural inequalities and residential mobility patterns that create additional hurdles to maintaining steady friendships (Ng et al., 2023). The significant total effect of social contribution without mediation through loneliness or isolation suggests that making meaningful contributions to society and feeling valued by others may protect mental health through alternative pathways, such as enhanced self-worth, purpose and meaning in life, self-efficacy, and positive identity development that were not captured in our mediation models (Rippon et al., 2024).

Contrary to our hypotheses, neighborhood social cohesion, community contribution, and social integration showed no significant direct effects on psychological distress or depression, nor did they demonstrate significant mediation through pathways involving loneliness or social isolation. While unexpected, these null findings align with emerging evidence indicating that approximately 17% of longitudinal studies have found no association between community aspects of social connectedness and depression (Wickramaratne et al., 2022). Several factors may explain these unexpected results. First, variables that measure community aspects of connectedness may influence mental health through longer pathways that require more time to show effects, whereas our study examined more immediate mediating mechanisms within a relatively short timeframe (Choi, 2024). Second, the protective effects of neighborhood cohesion and community integration may depend heavily on other contextual factors, such as neighborhood socioeconomic status, racial makeup, or exposure to discrimination, which were not fully captured in our models (Zimmerman et al., 2023). Third, for Black Americans specifically, neighborhood social cohesion might have complex, sometimes paradoxical effects on mental health. Living in predominantly Black neighborhoods can offer cultural support and reduce exposure to discrimination, but it may also limit access to economic opportunities and resources (Smith, 2024; Williams and Mohammed, 2009). Additionally, the dominance of family support may partly explain these null effects. Strong kinship networks are a well-documented cultural resource in Black American communities

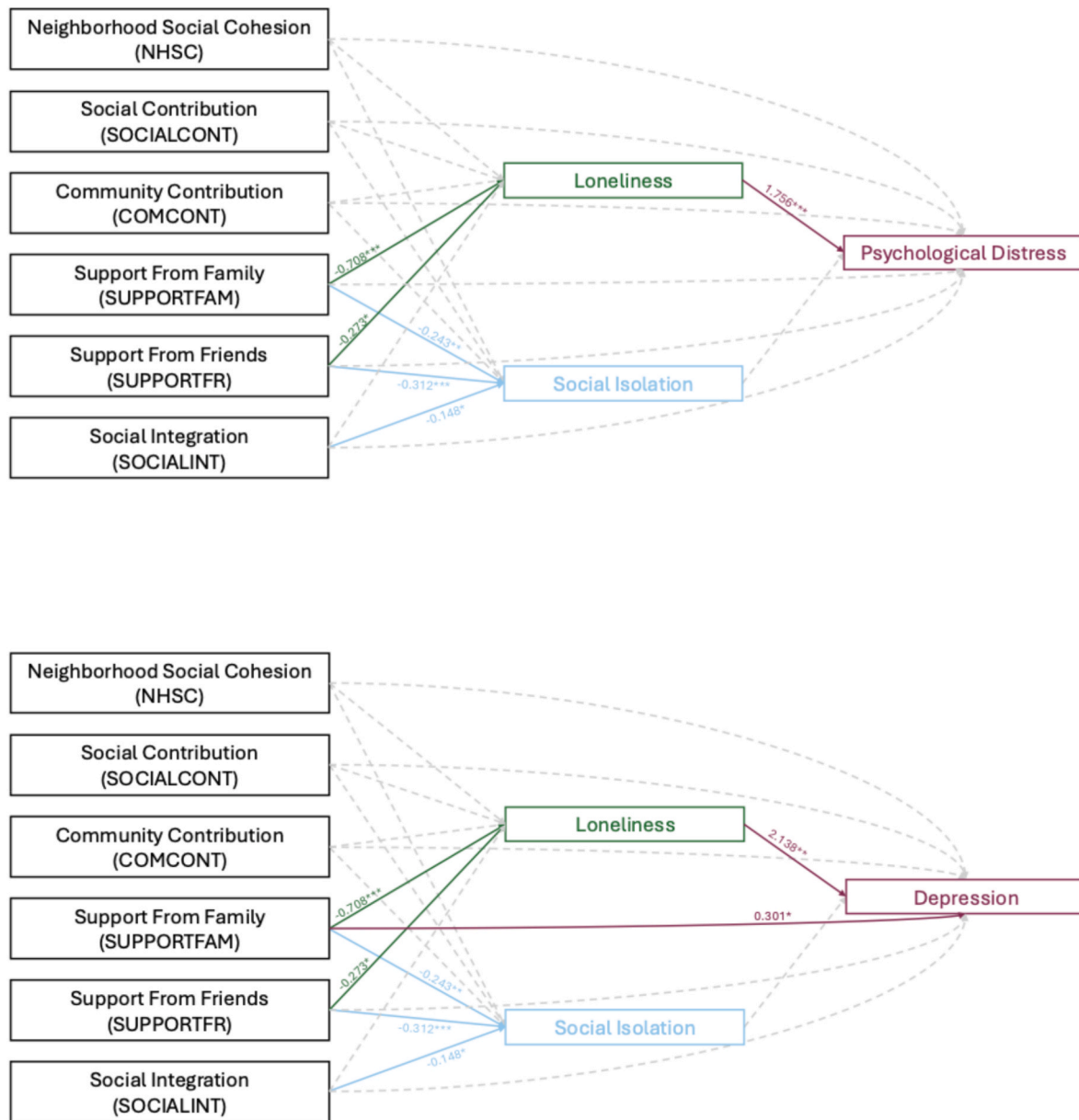


Fig. 1. Structural Equation Model: Pathways from Social Connectedness to Mental Health Outcomes Through Loneliness and Social Isolation
Note: * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$.

(Lincoln et al., 2011), and when family support is robust, individuals may rely primarily on these intimate bonds to buffer against loneliness, leaving more distal connections such as neighborhood ties and community roles with limited additional variance to explain in mental health outcomes. These findings suggest that community aspects of social connectedness may require different analytical approaches or longer follow-up periods to identify meaningful mental health impacts.

Unexpectedly, social isolation showed minimal mediating effects for both psychological distress and depression in our study, a finding that contradicts the literature (Child and Lawton, 2020; Wang et al., 2025; Zha and Chen, 2025) but aligns with growing evidence that objective social isolation (measured by contact frequency or network size) often demonstrates weaker links to mental health outcomes than subjective loneliness (Ojembe et al., 2022). Several methodological and contextual factors may explain this finding. First, our isolation measure focused on interaction frequency with family, friends, and neighbors; however, our dataset lacked several important dimensions, such as network diversity, relationship quality, and community engagement, beyond simple

contact frequency (Cornwell and Waite, 2009b; Shin and Park, 2023). Second, midlife participants (average age 55.4 years) may develop adaptive strategies that support well-being despite fewer interactions, as research shows that midlife and older adults often prioritize meaningful relationships over quantity, with diverse, high-quality networks remaining protective even with lower contact frequency (Norlin et al., 2025). Among Black Americans specifically, this resilience may be especially strong, as research highlights that emotional closeness, multigenerational exchanges, and fictive kin relationships can sustain psychological well-being even with infrequent contact (Ojembe et al., 2022; Taylor et al., 2020). These findings emphasize that, for this population, subjective loneliness may have greater psychological importance than objective social contact patterns.

5. Strengths and limitations

This study has several notable strengths. First, we utilized a longitudinal sample focused specifically on Black Americans at midlife, a

Table 4

Standardized direct, indirect, and total effects of social connectedness, loneliness, and social isolation on mental health outcomes, longitudinal dataset (n = 592).

	Direct Effect	Indirect Effect through Social Isolation	Indirect Effect through Loneliness	Total Effect
Psychological Distress (Continuous, β Coefficients)				
NHSC	−0.010	0.028	−0.325	−0.307
SOCIALCONT	−1.277	−0.003	−0.046	−1.325*
COMCONT	0.241	0.027	−0.218	0.050
SUPPORTFAM	−1.295	0.061	−1.244**	−2.477*
SUPPORTFR	−0.302	0.079	−0.479*	−0.703
SOCIALINT	0.356	0.037	−0.194	0.199
Depression (Binary, Odds Ratios)				
NHSC	1.430	1.078	0.869	1.340
SOCIALCONT	0.428	0.993	0.980	0.417
COMCONT	0.496	1.075	0.911	0.486
SUPPORTFAM	0.301*	0.166	0.538*	0.208**
SUPPORTFR	1.700	0.213	0.208	1.709
SOCIALINT	1.843	0.101	0.084	1.874

Significance: * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$.

Abbreviations: NHSC, Neighborhood Social Cohesion; SOCIALCON, Social Contribution; CONTCOM, Community Contribution; SUPPORTFAM, Support from Family; SUPPORTFR, Support from Friends; SOCIALINT, Social Integration.

Note 1: Models adjusted for age, sex, spirituality, religiosity, education, marital status, employment status, self-rated physical health, home ownership, income, and years living in current residence. All models used inverse probability weights and clustered standard errors by census tract (n = 49 clusters).

Note 2: Standardized coefficients represent the change in standard deviations of the outcome variable for a one standard deviation change in the predictor variable.

population that is often understudied in the social connectedness and mental health literature. Second, our assessment of six distinct dimensions of social connectedness allowed us to examine specific pathways rather than treating social connection as a monolithic construct. Third, our longitudinal design allowed us to examine temporal relationships and mediating pathways over a substantial period, thereby strengthening causal inferences about the relationships between social connectedness, loneliness, social isolation, and mental health outcomes.

Several important limitations should be considered when interpreting our results. First, loneliness was assessed with a single item, which, although validated and frequently used in population-based research (Kotwal et al., 2021; Shiovitz-Ezra and Ayalon, 2012), may not fully distinguish emotional from social dimensions of loneliness as captured by comprehensive tools such as the UCLA Loneliness Scale (Russell, 1996). From a model stability standpoint, single-item measures introduce greater measurement error than multi-item scales, which may attenuate the magnitude of indirect effects through loneliness and potentially underestimate its mediating role. As a secondary data analysis, we had no control over the measures available in the MIDUS dataset. Future research should employ validated multi-item loneliness scales to confirm and extend these findings. Second, our measure of social isolation focused only on the frequency of interactions across three social categories, potentially missing other key structural aspects of social disconnection, such as network scope, relational depth, role engagement, or civic participation, which are examined in more detailed assessments (Cornwell and Waite, 2009b; Lubben et al., 2006). This measurement limitation may explain the minimal mediating effect of social isolation observed in our analyses. Third, the exposures and mediators were assessed concurrently at Wave 2; we cannot establish the temporal sequence between social connectedness and loneliness or social isolation. Future research using three-wave designs would allow exposures, mediators, and outcomes to be measured at distinct time points. Fourth, the Social Contribution ($\alpha = 0.530$) and Social Integration ($\alpha = 0.585$) subscales demonstrated lower internal consistency than

conventionally recommended. This might be largely attributable to their brevity; both contain only three items. Cronbach's alpha is mathematically constrained by scale length independent of true construct reliability. These scales were retained because they represent theoretically distinct and important dimensions of social connectedness (perceived societal value and community belonging) that would be absent if excluded, and both have established construct validity in prior MIDUS-based research (Keyes, 1998). Nonetheless, findings for these dimensions should be interpreted with appropriate caution.

6. Implications for research, policy, and practice

Our findings may inform clinical, behavioral, and policy interventions. First, interventions should focus on addressing individuals' subjective experiences of social connection rather than simply increasing contact frequency. Mental health programs should include components that explicitly target loneliness, such as cognitive-behavioral interventions that challenge negative social beliefs (Hoang et al., 2022; Patil and Braun, 2024), peer support groups that foster genuine emotional bonds (Kotwal et al., 2021), and community-based programs that prioritize the quality of social relationships. Promising models already exist in Milwaukee, WI. For example, the Milwaukee Community Crossroads' Older Adults Dine Out Program delivers culturally diverse meals to residents aged 60 and older while supporting restaurants owned by people of color, women, and veterans (Milwaukee Community Crossroads, 2025). While a full evaluation of the efficacy of these programs is beyond the scope of this study, the examples demonstrate how addressing basic needs such as nutrition can be strategically designed to reduce loneliness by emphasizing relationship quality, cultural connection, and regular social engagement, rather than merely focusing on food delivery.

Second, our findings underscore the need for family-centered interventions and policies that support family relationships during midlife. Community-based initiatives, such as neighborhood block parties, offer a promising and low-barrier way to strengthen social bonds, reduce isolation, and build collective efficacy in urban areas (Dean et al., 2015). These events offer opportunities for multiple generations to participate in shared community activities, addressing both family connection and broader social integration simultaneously. Milwaukee has several existing models that could be expanded. For example, Family Bonds at Hope House Milwaukee provides rapid rehousing with up to two years of family-focused case management, directly supporting relationships between older and younger family members in households working to stabilize housing. However, family-centered mental health interventions remain limited in scope. Policymakers should prioritize expanding these programs by increasing funding for family engagement components in senior centers and community health settings, revising Medicaid and Medicare reimbursement policies to support family therapy for older adults, and developing workforce initiatives that train providers in family systems approaches for aging populations. Additionally, healthcare systems should include routine screening for loneliness and family support during geriatric assessments, establishing clear referral pathways to family-centered interventions when necessary.

7. Conclusion

This longitudinal study indicates that interventions for Black Americans in midlife should prioritize strengthening family relationships, with family support operating primarily through reduced loneliness as the key mediating pathway, rather than through increased frequency of social contact. Further research is necessary to assess family-focused and community-based strategies for reducing loneliness and promoting mental health.

CRediT authorship contribution statement

Yu-Tien Hsu: Conceptualization, Formal analysis, Investigation, Methodology, Validation, Visualization, Writing – original draft, Writing – review & editing. **Yusuf Ransome:** Conceptualization, Data curation, Formal analysis, Funding acquisition, Investigation, Methodology, Project administration, Resources, Supervision, Validation, Visualization, Writing – original draft, Writing – review & editing.

Ethical approval

This study was determined to be exempt from review by the Yale University School of Public Health Institutional Review Board (IRB exemption number: 2000035165).

Funding

This research was supported by the National Institute on Minority Health and Health Disparities of the National Institutes of Health under Award Number R01MD018502. The views expressed are those of the authors and do not necessarily represent the official position of the National Institutes of Health.

Declaration of competing interests

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

Acknowledgment

We would like to express our gratitude to the participants of the Midlife in the United States (MIDUS) study, whose data made this research possible.

Appendix A. Supplementary data

Supplementary data to this article can be found online at <https://doi.org/10.1016/j.jpsychires.2026.08.019>.

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