American Journal of Epidemiology

Vol. 192, No. 10
https://doi.org/10.1093/aje/kwad152
Advance Access publication:
July 3, 2023

Original Contribution

More Than Identity: An Intersectional Approach to Understanding Mental-Emotional Well-Being of Emerging Adults by Centering Lived Experiences of Marginalization

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Initially submitted August 10, 2022; accepted for publication June 30, 2023.

Understanding social determinants that shape pertinent developmental shifts during emerging adulthood (i.e., ages 18–25 years) and their associations with psychological health requires a nuanced approach. In our exploratory study, we investigated how multiple social identities and lived experiences generated by systems of marginalization and power (e.g., racism, classism, sexism) intersect in connection to the mental-emotional well-being of emerging adults (EAs). Eating and Activity Over Time (EAT, 2010–2018) data were collected from 1,568 EAs (mean age = 22.2 (standard deviation, 2.0) years) recruited initially in 2010 from Minneapolis/St. Paul schools. Conditional inference tree analyses were employed to treat "social location" and systems of marginalization and power as interdependent social factors influencing EAs' mental-emotional well-being outcomes: depressive symptoms, stress, self-esteem, and self-compassion. Conditional inference tree analyses identified EAs' subgroups with differing mean levels of mental-emotional well-being outcomes, distinguished primarily by marginalized social experiences (e.g., discrimination, financial difficulties) rather than social identities themselves. The relative positioning of EAs' experiences of social marginalization (e.g., discrimination) to their social identities (e.g., race/ethnicity) suggests that the social experiences generated by systems of privilege and oppression (e.g., racism) are more adjacent social determinants of mental-emotional well-being than the social identities used in public health research to proxy the oppressive systems that give them social meaning.

conditional inference trees; depressive symptoms; intersectionality; racism; self-compassion; self-esteem; sexism; young adults

Abbreviations: CIT, conditional inference tree; EA, emerging adult; EAT, Eating and Activity Over Time; EDS, Everyday Discrimination Scale.

Mental and emotional well-being are integral and necessary components of overall health and wellness. Nearly half of the US population will meet diagnostic criteria for one or more commonly occurring mental disorders (e.g., depressive disorders, anxiety disorders) in their lifetime (1). The proportion of US adults with a mental health condition has grown steadily in the last decade, especially among emerging adults (EAs), that is, adults aged 18–25 years (2). The past-year prevalence of mental health conditions among EAs in the United States grew by >10% between 2009 (18%) and 2019 (29.4%) (2), a trend further exacerbated by the coronavirus disease 2019 (COVID-19) pandemic (3).

While mental-emotional well-being is a public health concern across the lifespan, emerging adulthood represents an important stage in the life course for psychological health risk (4) and mental health promotion (5). Distinct from adolescence and adulthood, emerging adulthood signifies a transition period characterized by increased identity exploration, independence, instability, and feelings of being "in between" adolescence and adulthood (4, 6). As such, emerging adulthood is fraught with new challenges and uncertainties about one's future and new social expectations and experiences that can elicit high levels of stress and affect psychological health (5).

The impact of this transitional period on young adults' mental-emotional well-being may differ by social identity or group membership. This is especially true when identity or group membership reflects a social stratum constructed by a social classification system, such as racism, sexism, or classism, that apportions societal value, power, and privilege to one group over another based on phenotype, gender, or socioeconomic class. Developmental shifts during emerging adulthood may increase individuals' exposure to marginalizing experiences such as racial discrimination (7), sexual or gendered harassment (8), or other marginalizing life experiences (e.g., food insecurity) as EAs navigate new social and institutional environments (7, 9). These marginalizing experiences may prompt stress appraisal and emotional and behavioral responses that influence mental-emotional well-being (7, 10). For example, in a racially diverse sample, Frye and Liem (11) found Black individuals were particularly likely to experience increased depressive symptoms across emerging adulthood. The authors posit that the increase in depressive symptoms for Black EAs may be explained by new sources of racism faced outside of the communities in which Black EAs grew up, and increased recognition of the implications of racism on their educational and career pursuits (11).

Understanding social determinants that shape pertinent developmental shifts during emerging adulthood, and their associations with psychopathology and psychosocial health, requires a nuanced approach. Most research has investigated EAs' mental-emotional well-being from a viewpoint that speaks to single categories of group identity or membership (12, 13). But social identity is multifaceted, as people simultaneously belong to several different social groups based on a range of characteristics they hold. Young people's lived experiences likely vary across an array of distinct, intersecting group identities or memberships, especially if the social strata within the group identity reflect the power relations of interlocking systems of privilege and oppression. Discerning how EAs' lived experiences shape their mental-emotional well-being requires acknowledgment that people's self-concept and broader psychological health are formed on more than membership in multiple social groups (13, 14). It requires attention to the power relations within social interactions and social strata connected to interconnected systems of power and marginalization that EAs must navigate in new recursive social and institutional environments.

Conceived by Black feminist scholar-activists (15–17), intersectionality premises that multiple aspects related to social categories or strata like race, ethnicity, gender, body size, and socioeconomic standing "intersect at the micro-level of individual experience to reflect interlocking systems of privilege and oppression (e.g., racism, sexism, [weightism], classism) at the macro social structural level" (18). Simply stated, social classification systems (e.g., racism, sexism, weightism, classism) are interdependent and construct unique experiences for individuals whose "social location" is situated at their intersection (19). Intersectionality is rapidly gaining traction in public health because of the framework's ability to provide insight into health inequities and the dynamics of unearned advantage that creates inequities (20). However, intersectionality as a public health framework is largely underemployed when used, sometimes equated with statistical interactions (18), stripped of its focus on interlocking systems of power and oppression (21, 22), and is often divested from its rich theoretical underpinning in social justice and action (18, 22). Studies that fully engage the epistemology of intersectionality—including its attention to power, social justice, and praxis—are needed to harness the critical and transformational clarity that intersectionality as a framework provides (14, 22–24).

This study uses an intersectional approach to explore how social location and experiences (e.g., discrimination, allocation of resources) attached to systems of marginalization and power (e.g., racism, classism, sexism, weightism) intersect to contribute to heterogeneity in psychosocial well-being among EAs. Specifically, our study focuses on 4 measures of mental-emotional well-being to represent a more holistic picture of mental health: depressive symptoms, stress, self-esteem, and self-compassion. Each aspect is likely influenced by the varied life trajectories and transitions experienced during emerging adulthood (e.g., individual pathways through work, school, social relationships, and residential status) (25). Self-esteem and self-compassion each support positive mental health (26, 27).

Traditional methods of looking at interactive effects are not well-suited for analyses wherein multiple input variables may intersect (e.g., 4- or 5-way interactions). Intersectional quantitative methods such as multilevel analysis of individual heterogeneity (28, 29) and decision-tree methods (30, 31) offer greater flexibility in modeling high-dimensional intercategorical intersections. In this exploratory study, we employed conditional inference trees (CITs) (30, 31), a decision tree method, to facilitate the identification of subgroups of EAs who differ across mental-emotional well-being outcomes and profiles of predictor variables (e.g., social identity and oppressive experiences). Decision tree methods, compared with other intersectional quantitative methods such as traditional regression and multilevel analysis of individual heterogeneity, are particularly useful for exploratory research questions that aim to identify main and interactive effects among a large number of input variables and detect unknown relevant subgroups (31–33). While there are numerous decision tree methods, a conditional inference tree (CIT) approach was selected as opposed to classification and regression trees (CART) since simulation studies suggest that CART tends to limit the depth of the decision tree prematurely (30, 31) and introduces a bias toward the selection of input variables that provide more potential split points (e.g., continuous, categorical variables) (32, 33) Study results will guide future research by identifying pertinent intersecting "social locations" and oppressive experiences that may influence psychological well-being during emerging adulthood.

METHODS

Sample and study design

EAT (Eating and Activity Over Time) 2010–2018 is a longitudinal study on the eating, activity, and weight-related

health of a population-based sample of racially/ethnically and socioeconomically diverse young people as they progressed from adolescence to young adulthood (34). Young people (n = 2,793) were recruited as adolescents during the 2009–2010 school year from 20 public middle and high schools in the Minneapolis/St. Paul area of Minnesota and administered the EAT-2010 survey in 2009–2010. For the second study wave, 2017–2018, current contact information was available for 2,383 (85.3%) participants. Of these, 1,568 young people (65.8%) were administered and completed the EAT-2018 survey as EAs (mean age = 22.2 (standard deviation, 2.0) years). For this exploratory study, with a few exceptions, data stem from the EAT-2018 survey, as measures of discrimination, teasing, and harassment were not included in the initial survey; information on young people's race/ethnicity, nativity status, and parental employment and education stem from EAT-2010. EAT 2010–2018 was approved by the University of Minnesota Institutional Review Board.

Measures

Input variables. The CIT models included 22 input or predictor variables described in Table 1. Input variables represented socially constructed identities, socioeconomic positions, and social experiences given social status and meaning by systems of power and marginalization.

Outcome variables. The outcome variables included 4 measures of mental-emotional well-being: depressive symptoms, stress, self-esteem, and self-compassion. Depressive symptoms (e.g., "feeling unhappy") within the past 12 months were measured with 6 items from the Kandel and Davies Depressive Mood Scale (35) (α = 0.89). The scale ranged from 6 to 18, with a higher score indicating more depressive symptomatology. Stress was measured with a single item: "On a scale from one to ten, with one being not stressed at all and ten being very stressed, how would you rate your average level of stress in the past 30 days?" Self-esteem was assessed with 6 items from the Rosenberg Self-Esteem Scale (36) (α = 0.81); participants' response options were 1 (strongly disagree) to 4 (strongly agree). The summative score for the 6-item Rosenberg Self-Esteem Scale ranged from 6 to 24. Self-kindness, a form of self-compassion, was measured with 5 items from the self-kindness subscale of the validated Self-Compassion Scale (37) (α = 0.88). Participants were asked how often they engage in behaviors associated with self-compassion (e.g., "When I'm going through a very hard time, I give myself the caring and tenderness I need"). Response options included 1 (almost never) to 5 (almost always), with the overall score ranging from 5 to 25.

Test-retest reliability of outcomes measures was examined using data from a subgroup of 112 young adult participants who completed the EAT-2018 survey twice within 3 weeks. Test-retest reliability was acceptable (38) (r = 0.70 to 0.78) for the Kandel and Davies Depressive Mood Scale, Stress Scale, and Rosenberg Self-Esteem Scale; test-retest reliability was slightly lower for the self-compassion subscale (r = 0.61).

Statistical analysis

All EAT-2018 survey participants (n = 1,568) were included in statistical analyses. Descriptive statistics were computed using SPSS, version 25 (IBM Corp., Armonk, New York). Four CIT models, one for each outcome variable, were developed to identify input variables' independent and interdependent influence on each mental-emotional well-being measure (39). CITs is a nonparametric approach that uses binary recursive partitioning methods to estimate a regression relationship among input variables with different distributional properties and missing values (33). Within the CIT framework, models can simultaneously consider all input variables entered into a model to identify distinct population subgroups based on the most important main and intersecting (i.e., interactive) effects for a given outcome (32, 33, 39). CIT models partitioned participants into distinct subgroups based on input variables as they relate to the outcome variable.

The CIT model derived pertinent interaction effects with increasing specificity on both sides of the decision tree solution following identification of the first node variable and the binary split (i.e., the CIT-derived cutpoint) for the node variable. In a first step, CIT algorithms concurrently consider the linear associations between all input variables and the outcome variable. In a second step, the input variable with the strongest linear association to the outcome variable is selected; a binary cutpoint, or split, is created by maximizing the corresponding 2-sample association test across all possible binary splits. In a third step, steps 1 and 2 are recursively repeated. All decision-tree methods include several hyperparameters (e.g., mincriterion, minsplit, mtry) that may be tuned through cross-validation procedures to identify a solution with high predictive performance. A recent study examined the efficacy of 6 tuning methods (e.g., random search, genetic algorithm, sequential model–based optimization) across 94 publicly available data sets, wherein authors recommended using default CIT settings (40). The default CIT hyperparameters achieved greater predictive performance in 40% of cases and statistically equivalent performance to tuned hyperparameters in 35% of cases (40). Hence, we applied the default CIT hyperparameters (mincriterion = 0.95, minsplit = 20, minbucket = 7, mtry = 0), and the multiplicity adjusted P values stop criterion was used to ensure that each CIT was grown to the appropriate size (e.g., number of splits). All CIT models were fitted in R Studio (version 2021.09.2.382; Posit, Boston, Massachusetts) using the partykit (version 1.2–15) package (41).

RESULTS

Our sample of EAs was heterogeneous in relation to racial/ethnic identities; 22.7% of participants self-identified as Asian, 22.1% Black/African American, 17.5% Hispanic/Latino/a, 23.4% White, 14.3% mixed or other race. Nearly three-fourths (72.1%) of Black participants self-identified as Black or African American alone; 27.9% self-identified as Ethiopian, Somalian, or another ethnic group. Most Asian participants identified as Hmong (80.1%). Most participants (83.7%) were born in the United States, and English was

Table 1. Description of Input Variables Included in the Conditional Inference Tree Analyses Performed Using Data From Eating and Activity Over Time, United States, 2010–2018

Item No.	Variable	Process of Oppression, Marginalization, Privilege, and Power	Operational Description
1	Gender	Social identity connected to sexism, genderism	Participants reported their gender during EAT 2018. Response options included: 1) male, 2) female, 3) different identity.
2	Race/ethnicity	Social identity connected to racism	Participants reported their racial/ethnic identity at EAT 2010. Response options included White, Black or African American, Hispanic or Latino, Asian American, Native Hawaiian or other Pacific Islander, American Indian or Native American, and other. Participants were able to select more than one identity. Due to small cell sizes, race/ethnicity was modeled with 5 categories: 1) White, 2) Black or African American, 3) Hispanic or Latino, 4) Asian, and 5) mixed or other racial group.
3	US nativity	Social identity connected to ethnocentrism and xenophobia	US nativity was assessed with the question "Were you born in the United States?" at EAT 2010. Response options included: 1) yes, 2) no.
4	Household language	Social identity connected to ethnocentrism	During EAT 2010, household language was assessed with the question: "What language is usually spoken in your home?" Response options included: 1) English; 2) a language other than English; and 3) English and another language about equally.
5	Personal income	Social position connected to classism	Personal income during EAT 2018 included response options: 1) none; 2) under $5,000 a year; 3) $5,000 to $14,999 a year; 4) $15,000 to $24,999 a year; 5) $25,000 to $29,999 a year; 6) $30,000 to $39,999 a year; 7) $40,000 a year or more.
6	Public assistance	Social position connected to classism	Receipt of public assistance was measured at EAT 2018 with a single question: "In the past year, did you or any member of your household receive WIC benefits or SNAP benefits?" Response options were: 1) no, 2) yes, and 3) I don't know
7	Personal educational attainment	Social position connected to classism	"What is the highest level of education that you have completed?" Responses ranged from: 1) middle school or junior high to 8) graduate or professional degree (master's degree, PhD, MD, etc.). Due to small cell size, responses were categorized into 5 groups: less than high school, high school or GED equivalent, college degree, advanced degree, and vocational or other. Test-retest agreement = 92.0%.
8	Financial difficulty	Social position connected to classism	Financial difficulty was measured at EAT 2018 with a single item asking the degree of difficulty participants currently experience living on their total household income (58). Participants selected from 4 response options: 1) not at all difficult, 2) somewhat difficult, 3) very difficult or can barely get by, 4) extremely difficult or impossible. Due to small cell sizes, response options very difficult and extremely difficult or impossible were merged into a single response.
9, 10	Parental education[a]	Social position connected to classism	Participants reported at EAT 2010 how far in school each parent (e.g., mother, father) went, with response options: 1) did not finish high school; 2) finished high school or got GED; 3) some college or training after high school; 4) finished college; 5) advanced degree (e.g., master's degree, PhD, MD); 6) I don't know.

Table continues

Table 1. Continued

Item No.	Variable	Process of Oppression, Marginalization, Privilege, and Power	Operational Description
11, 12	Parental employment[b]	Social position connected to classism	Participants reported the employment status of each parent (e.g., mother, father) at EAT 2010, with response options of: 1) full time, 2) part time, 3) not working for pay or other, 4) I don't know.
13, 14	Neighborhood safety[c]	Social experience connected to racism and classism	Participants responded to 2 questions at EAT 2018: 1) "The crime rate in my neighborhood makes it unsafe to go on walks during the day"; and 2) "the crime rate in my neighborhood makes it unsafe to go on walks at night." Response options included: 1) strongly disagree, 2) somewhat disagree, 3) somewhat agree, and 4) strongly agree.
15, 16	Food insecurity[d]	Social experience connected to racism, classism, sexism/genderism	Participants responded at EAT 2018 to 2 questions assessing food insecurity within the past 12 months: 1) "Did you ever eat less than you felt you should because there wasn't enough money for food?" and 2) "Were you ever hungry but didn't eat because there was not enough money for food?" Response options included: 1) no, 2) yes, and 3) I don't know.
17	Intersectional everyday discrimination	Social experience connected to racism, classism, sexism/genderism, harmful beauty ideals	Day-to-day discrimination was defined as ongoing or routine everyday experiences of unfair or differential treatment of people by social institutions or individuals because of race/ethnicity, class, sex, or other social attributes (59, 60). Participants were asked to respond at EAT 2018 to 3 specific questions from the EDS. Participants were not required to ascribe the experience of unfair treatment to any one attribute (e.g., race/ethnicity, class, sex, etc.). Example items include being treated with less respect or courtesy or receiving poorer service than other people. Response options for each item range from 1) never to 5) a few times a month. The 3 EDS items were summarized into a single summary score for day-to-day discrimination, ranging from 3 (none) to 15 (high) ($\alpha = 0.83$, test-retest $= 0.69$).
18–22	Teasing or harassment[e]	Social experience connected to racism, classism, sexism/genderism, harmful beauty ideals	Participants were asked at EAT 2018 to respond to 5 questions about different forms of teasing or harassment. Each form of teasing or harassment pertained to socially sanctioned identities or specific experiences): 1) race/ethnicity, 2) financial situation, 3) sexual way (e.g., grabbing/pinching, sexual comments, unwanted touching, etc.), 4) weight, or 5) appearance. Response options for each question were: never, less than once a year, a few times a year, a few times a month, at least once a week.

Abbreviations: CIT, conditional inference tree; EAT, Eating and Activity Over Time; EDS, Everyday Discrimination Scale; GED, General Educational Development; SNAP, Supplemental Nutrition Assistance Program or Food Stamp Program; WIC, Special Supplemental Nutrition Program for Women, Infants, and Children.

[a] Each parent's educational status was entered in the conditional inference tree models as a separate input variable.

[b] Each parent's employment status was entered in the CIT models as a separate input variable.

[c] Each measure of neighborhood safety was entered in the CIT models as a separate input variable.

[d] Each form of food insecurity was entered in the CIT models as a separate input variable.

[e] Each type of harassment or teasing was entered in the CIT models as a separate input variable.

the only language in the household for 59%. More than half (58.0%) of the EAs identified as female, 41.3% identified as male, and <1% reported a different gender identity. Descriptive statistics for each input variable and additional demographic characteristics are presented in Table 2. Web Table 1 provides the distribution of scores on the everyday discrimination scale (EDS) and means for each mental-emotional health outcome by race/ethnicity and gender.

Depressive symptoms

The depressive symptoms CIT model, Web Figure 1, revealed 11 subgroups of EAs that differed in average depressive symptom scores (range, 8.5–15.5). The subgroups were shaped by 6 of 22 input variables, including everyday discrimination, financial difficulty, weight teasing, going hungry due to food insecurity, sexual teasing/harassment, and gender identity. Everyday discrimination (EDS range: 3 (none) to 15 (high)) was the first splitting variable and had the strongest association with depressive symptoms; the CIT-derived cutpoint on the EDS was a value of 4. Subgroups of EAs who reported relatively no everyday discrimination (EDS < 4) were further shaped by weight teasing, going hungry due to food insecurity, and gender identity. In contrast, subgroups among EAs reporting some occurrences of everyday discrimination (EDS > 4) were further informed by financial difficulty, the frequency of everyday discrimination, going hungry due to food insecurity, and sexual teasing/harassment.

Across the 11 subgroups, the mean depressive symptom score was highest (mean $= 15.5$; $n = 59$) for the group of EAs who faced everyday discrimination more than a few times a year (EDS > 9), very/extremely difficult financial situation, and going hungry due to food insecurity. The average depressive symptoms score was lowest (mean $= 8.5$; $n = 191$) among the group of EAs who reported relatively no discrimination (EDS ≤ 4), experienced weight teasing less than once a year, had never gone hungry due to food insecurity over the past year or did not know if they had, and self-identified as male.

Stress

The CIT model for stress, Web Figure 2, revealed 10 subgroups in which EAs differed by mean stress scores (range, 3.6–8.5). The subgroups were shaped by 6 of 22 input variables, including everyday discrimination, financial difficulty, gender identity, race/ethnicity, appearance-based teasing, and going hungry due to food insecurity. Like the depressive symptoms CIT model, everyday discrimination was the first splitting variable and had the strongest association with stress; the CIT-derived cutpoint on the EDS (range, 3–15) was a value of 4. Subgroups among EAs reporting relatively no discrimination (EDS ≤ 4) were further informed by the input variables of financial difficulty, gender identity, race/ethnicity, and appearance-based teasing. In contrast, subgroups of EAs reporting some occurrences of everyday discrimination (EDS > 4) were further characterized by the input variables of financial difficulty, going hungry due to food insecurity, the frequency of everyday discrimination, and gender identity.

Across the 10 subgroups, the average stress score was highest (mean $= 8.5$; $n = 85$) for the group of EAs who experienced everyday discrimination with greater frequency (EDS > 9) and very/extremely difficult financial situation. Conversely, the mean stress score was lowest (mean $= 3.6$; $n = 121$) among the EA group who encountered relatively no day-to-day discrimination (EDS ≤ 4), fewer financial challenges (not at all/somewhat difficult to get by), and identified as a Black/African American, Asian, or mixed/other race, and male.

Self-esteem

Twelve subgroups of EAs with differing average self-esteem scores (range, 13.1–19.7) unfolded from the self-esteem CIT model (Web Figure 3). The subgroups were shaped by 8 of 22 input variables, including appearance-based teasing, everyday discrimination, eating less due to food insecurity, race/ethnicity, financial difficulty, going hungry due to food insecurity, education, and teasing related to finances. Unlike the CITs for depressive symptoms and stress, appearance-based teasing was the first splitting variable in the self-esteem CIT and had the strongest association with self-esteem. The CIT created a dichotomous split for appearance-based teasing: "never" vs. "less than once a year" to "at least once a week." For EAs who "never" experienced appearance-based teasing, subgroups were also shaped by everyday discrimination, financial difficulty, eating less: due to food insecurity, and race/ethnicity. In contrast, the EA subgroups who faced appearance-based teasing were informed further by everyday discrimination, going hungry due to food insecurity, appearance-based treatment frequency, education, race/ethnicity, and financial-based teasing.

Across the 12 subgroups of self-esteem scores, the mean self-esteem was lowest (mean $= 13.1$; $n = 69$) among EAs who encountered appearance-based teasing "a few times a month or more" and financial-based teasing "never," "a few times a year," "a few times a month," or "at least once a week." Self-esteem scores were highest (mean $= 19.7$; $n = 261$) among the subgroup of EAs who reported no occurrence of appearance-based teasing, everyday discrimination (EDS $= 3$), and ate less due to food insecurity. They self-identified as White, Black, Latino/a, or mixed/other.

Self-compassion

The self-compassion CIT model (Web Figure 4) revealed 4 subgroups differing in average self-compassion scores (15.0–18.2). Compared with the other mental-emotional well-being outcomes, the subgroups for self-compassion were shaped by only 3 of 22 input variables: everyday discrimination, appearance-based teasing, and self-identified race/ethnicity. Everyday discrimination, the first CIT splitting variable, had the strongest association with self-compassion, and the CIT-derived cutpoint on the EDS was 5. EAs who reported few occurrences of everyday discrimination (EDS < 5, $n = 723$) formed a single subgroup; no

Table 2. Sample Descriptive Statistics for Each Input Variable Included in the Conditional Inference Tree Analyses and Additional Demographic Variables, Eating and Activity Over Time, United States, 2010–2018

Variable	No.	%	% Missing
Demographic Variables			
Age, years			0
18–19	113	7.2	
20–25	1,401	89.4	
26–30	54	3.4	
Input Variables			
Current educational level			1.2
Less than high school	89	5.8	
High school or equivalent	1,060	68.4	
College degree or higher	220	14.2	
Vocational, associate's, or other degree	180	11.6	
Gender			1.0
Male	642	41.3	
Female	900	58.0	
Different identity	11	0.7	
Race/ethnicity			<1.0
Asian	355	22.7	
African American/Black	345	22.1	
Hispanic/Latino/a	274	17.5	
White	366	23.4	
Mixed or other	223	14.3	
US nativity	1,312	83.7	<1.0
Household language			<1.0
English	927	59.2	
Another language	205	13.1	
English + another language	433	27.7	
Personal income, $/year			4.4
None	162	10.8	
<5,000	209	13.9	
5,000–14,999	384	25.6	
15,000–24,999	317	21.1	
25,000–29,999	134	8.9	
30,000–39,999	148	9.9	
≥40,000	145	9.7	
Public assistance			3.6
No	1,023	67.7	
Yes	370	24.5	
I don't know	119	7.9	
Financial difficulty			3.5
Not at all	279	18.4	
Somewhat difficult	897	59.3	
Very difficult/can barely get by	337	22.3	

Table continues

Table 2. Continued

Variable	No.	%	% Missing
Mother's educational attainment			1.7
Less than high school	220	14.3	
High school or equivalent	233	15.1	
Some college	227	14.7	
Graduated college	293	18.4	
Advanced degree	129	8.4	
I don't know	449	29.1	
Father's educational attainment			9.3
Less than high school	159	11.2	
High school or equivalent	209	14.7	
Some college	160	11.3	
Graduated college	212	14.9	
Advanced degree	104	7.3	
I don't know	577	40.6	
Mother's employment			1.8
Full time	646	41.9	
Part time	250	16.2	
Not working for pay	217	14.1	
I don't know	427	27.7	
Father's employment			10.0
Full time	664	47.1	
Part time	131	9.3	
Not working for pay	137	9.7	
I don't know	479	33.9	
Unsafe neighborhood during the day			<1
Strongly disagree	777	50.0	
Somewhat disagree	425	27.4	
Strongly to somewhat agree	352	22.7	
Unsafe neighborhood at night			1.5
Strongly disagree	491	31.8	
Somewhat disagree	337	21.8	
Strongly to somewhat agree	716	46.4	
Food insecurity—ate less			3.1
No	977	64.3	
Yes	458	30.1	
I don't know	85	5.6	
Food insecurity—gone hungry			2.9
No	1,056	69.3	
Yes	394	25.9	
I don't know	73	4.8	
Intersectional everyday discrimination[a,b]		6.1 (3.0)	3.4
None (3)	513	33.9	
Low (4–6)	389	25.7	
Medium (7, 8)	266	17.6	
High (9–15)	349	22.6	

Table continues

Table 2. Continued

Variable	No.	%	% Missing
Teasing or harassment—race			2.4
Never	944	61.7	
Less than once a year	261	17.1	
A few time a year	239	15.6	
A few times a month	72	4.7	
At least once a week	15	1.0	
Teasing or harassment—SES			2.6
Never	1,059	69.4	
Less than once a year	196	12.8	
A few times a year	185	12.1	
A few times a month	63	4.1	
At least once a week	24	1.6	
Teasing or harassment—sex			2.7
Never	1,209	79.3	
Less than once a year	118	7.7	
A few times a year	137	9.0	
A few times a month	45	3.0	
At least once a week	16	1.1	
Teasing or harassment—weight			2.8
Never	892	58.5	
Less than once a year	195	12.8	
A few times a year	277	18.2	
A few times a month	105	6.9	
At least once a week	55	3.6	
Teasing or harassment—appearance			3.0
Never	847	55.7	
Less than once a year	250	16.4	
A few time a year	282	18.5	
A few times a month	96	6.3	
At least once a week	46	3.0	
Outcome measures[a]			
Depressive symptoms[c]	11.2 (3.6)		3.4
Stress[d]	6.0 (2.5)		3.2
Self-esteem[e]	17.3 (3.5)		3.9
Self-compassion[f]	17.2 (4.6)		3.7

Abbreviations: SES, socioeconomic status; EDS, Everyday Discrimination Scale.
[a] Values are expressed as mean (standard deviation).
[b] 3-item intersectional EDS; score ranged from 3 to 15.
[c] Kandel and Davies Depressive Mood Scale (35); score ranged from 6 to 18.
[d] Single-item stress scale; score ranged from 1 to 10.
[e] 6-item Rosenberg Self-Esteem Scale (36); score ranged from 6 to 24.
[f] 5-item Self-Kindness subscale (37); score ranged from 5 to 25.

other input variables contributed to further subgroup formation. Their average self-compassion score was the highest (mean = 18.2) among all EA subgroups.

In contrast, EAs with everyday discrimination experiences (EDS > 5) were distinguished by the input variables of appearance-based teasing and self-identified race/ethnicity. In this group, appearance-based teasing was the second CIT splitting variable; a dichotomous split was created: "less than once a year" vs. "at least a few times a year." EAs who reported everyday discrimination with some frequency

(EDS > 5) and appearance-based teasing "less than once a year" (n = 472; mean = 16.9) comprise the second subgroup in the self-compassion CIT. The final 2 subgroups were characterized by EAs who reported appearance-based teasing occurring at least a few times a year or more and everyday discrimination with some frequency. Self-identified race/ethnicity was the final splitting variable in creating the third and fourth subgroups: White, Black, Latinx, and mixed/other (n = 239; mean = 15.0); Asian (n = 90; mean = 16.9).

DISCUSSION

The present study explores how marginalizing social experiences (e.g., everyday discrimination, teasing/harassment, financial difficulty, and food insecurity), social positions and social identities (e.g., race/ethnicity, gender) connected to systems of marginalization and power intersect in relation to depressive symptoms, stress, self-esteem, and self-compassion in a diverse sample of EAs. Of the 22 examined factors representing social experiences, positions, and identities, only 10 input variables appeared in any of the CITs for the 4 outcomes. Notably, factors identified as most important among our sample of EAs were input variables that consistently reflected marginalized social experiences: intersectional everyday discrimination, financially difficulty, appearance-based teasing, and food insecurity.

Conversely, input variables reflective of social identities (e.g., gender, race/ethnicity) demonstrated weaker associations with mental-emotional well-being outcomes. The relative positioning of EAs' experiences of social marginalization (e.g., discrimination) to their social identities (e.g., race/ethnicity, gender) or social positions suggests that the marginalizing experiences generated by systems of privilege and oppression (e.g., racism, sexism, genderism, classism)—such as everyday discrimination, financial difficulty, and different forms teasing/harassment—are more adjacent social determinants of mental-emotional well-being than the measures of social identity (e.g., race/ethnicity, gender) often used as proxies for systemic oppression in public health. For example, when race/ethnicity and gender emerged in the results, they were present in the more distal (or lower) branches of the grown decision tree for each outcome; they explained a smaller amount of variance in mental-emotional well-being outcomes. Yet, our intersectional measure of everyday discrimination—defined as ongoing or routine everyday experiences of unfair or differential treatment of people by social institutions or individuals because of race/ethnicity, class, sex, or other social attributes (42)—appeared prominently in the proximal (or higher up) branches of the grown decision tree for each outcome. This is not to say that race/ethnicity or gender are not important measures or that they are distinct, separate constructs from everyday discrimination. On the contrary, race/ethnicity, gender, and everyday discrimination are interconnected constructs given social meaning by systems built on power relations that condition psychological health.

In the present study, 2 factors—regularly experiencing everyday discrimination and having severe financial difficulty—were most influential in distinguishing EAs' perceived stress and depressive symptoms scores. Participants with the highest stress levels were described by these 2 factors alone. The experience of going hungry due to food insecurity further characterized EAs' depressive symptoms scores; EAs reporting everyday discrimination with great frequency, extreme financial difficulty, and going hungry due to food insecurity had the highest observed mean depressive symptom scores. Notably, no social identity variables (e.g., race/ethnicity, gender) were identified as salient in distinguishing EAs with the highest depressive symptoms or stress levels.

To better understand our study's value, we turn to prior literature on depressive symptoms and stress. We place our findings in the context of studies that considered independent or single-axis associations of experiences of discrimination, financial difficulty, or food insecurity with depressive symptoms or stress. Research provides evidence that EAs' experiences of discrimination and financial hardship are each associated with elevated depressive symptoms and stress (43, 44). Furthermore, depression is more common in individuals experiencing food insecurity (45), which has structural roots in classism, racism, and sexism (46). Longitudinal evidence sheds light on temporality, indicating that elevated depressive symptoms are predicted by prior experiences of discrimination (47), financial difficulties (48), and food insecurity (49). Our study uniquely speaks to how these social experiences are joined by interconnected systems of power, privilege, and marginalization to predict depressive symptomatology and stress levels. EAs in our study with the highest levels of depressive symptoms were situated at the intersection of 3 marginalizing social experiences: frequent encounters with everyday discrimination, financial difficulty, and food insecurity. These intersecting marginalizing social experiences each have structural roots in racism, classism, sexism, and other structural systems, but neither everyday discrimination, financial difficulty, nor food insecurity is conditioned on racism, classism, or sexism alone. For example, food insecurity is linked to the broader social and economic context in which people live (46), which may also simultaneously shape their experiences of financial hardship or difficulty (e.g., poverty, intermittent job loss, housing affordability) and everyday discrimination related to their race, class, gender, etc. (46) Future research into understanding the identified intersection may offer better insight into how to prevent or treat depression among EAs within the context of interlocking systemic factors.

Prior literature documents the independent or single-axis associations of discrimination with lower self-esteem (50, 51) and self-compassion (52, 53) but not at the intersection of marginalizing social experiences, social position, or social identity. In our study, experiences of everyday discrimination and appearance-based teasing were the 2 most important social determinants in distinguishing low self-esteem and self-compassion. EAs with the lowest levels of self-esteem were situated at the nexus of frequent encounters with everyday discrimination and regular experiences of teasing based on appearance and financial hardship. Likewise, EAs with the lowest self-compassion scores identified with a racial/ethnic group other than Asian/Asian American. They also had marginalizing social experiences centered on

their encounter with everyday discrimination and regular appearance-based teasing. Our findings suggest that future research needs to examine self-esteem and self-compassion at the nexus of these social experiences and race/ethnicity.

In addition to considering the relative positioning of social identities, social position, and social experiences connected to systems of marginalization in the CIT, evaluating the social determinants that did not appear can also offer important insights. Besides race/ethnicity and gender identity, input variables representative of social identities did not appear in the results for any mental-emotional well-being measure. Notably, social position-based factors such as household income were absent across all outcomes; the exception was educational attainment for EAs, which was present in the self-esteem CIT. As was likely true with discrimination and race/ethnicity, the absence of household income and education across results may be because the relative experiences of financial hardship and food insecurity are more proximal to mental health than absolute income or educational attainment. These findings highlight the importance of public health research to go beyond the measurement and inclusion of social identity variables, like race/ethnicity or gender and social position (e.g., education attainment) alone, as these measures are proxies of exposure to systemic oppression (54). If we are to understand better the nuances of EAs' mental health and well-being, public health must move toward the inclusion of measures that reflect complexity and relational power in variables that denote interconnected constructs of social identity and experiential social determinants that directly assess the mechanism and processes by which interlocking systemic oppression pattern health (54).

Strengths and limitations

There are strengths and limitations of a study to consider. First, this study cannot infer temporality or causality; its cross-sectional, observational study design prohibits such conclusions from being made. Still, the large, socioeconomically, and racial/ethnically diverse population-based sample enabled us to explore the mental health and emotional well-being of EAs regarding their multidimensional, complex lived realities shaped by the convergence of social determinants operating at the meso- and micro-level. In applying an intersectional perspective, we aimed not to reduce the lived experiences of EAs down to a single-axis of power or to promote an additive approach to multiple categories (race + gender + socioeconomic status) (14, 22).

Like the Intersectional Discrimination Index (55), a measure developed explicitly to function across various social identities, we did not ask for attributions. This enabled individuals in our study to report on experiences of unfair treatment at the nexus of multiple systems of oppression (e.g., racism and sexism). Still, it is possible that some items examined in the present study function differently by race, ethnicity, and/or gender. As such, future psychometric studies should examine the differential item functioning of commonly used measures of social determinants. The use of CIT analysis helped us explore interdependencies between many social factors representative of social identities, social positions, and marginalizing social experiences without predetermining one aspect of social identity, position, or experience as more important to the outcome than another (30). This approach allowed us to identify the variables and intersections most quantitatively relevant for our outcome measures.

Conclusions

We explored how social location and experiences (e.g., discrimination, allocation of resources) attached to systems of marginalization and power (e.g., racism, classism, sexism, weightism) intersect to contribute to heterogeneity in EAs' mental-emotional well-being. Study findings highlight an important distinction between intersectionality and social identity theory, countering the common misperception that intersectionality and social identity theories are synonymous (14). While lived experiences of marginalization can occur in tandem with social identities and positions, not all social groups map to lived experiences generated by social marginalization and systems of oppression (14). This study goes beyond "social identities" and their intersections to illuminate the relative importance that intersecting experiences of social marginalization—which reflect structures and institutional ideologies that disproportionately relay privilege, advantage, and health promotion—have on EAs' mental-emotional well-being. Our findings speak directly to the need for public health to incorporate intersectional justice (56, 57) in policy, research, and practice efforts aimed at deconstructing the macro-level sociostructural determinants that give rise to micro-level individual experiences associated with EAs' mental-emotional health. Such efforts require public health action that: 1) recognizes the diversity within social categories and centers the "social location" and lived experiences of EAs at the most marginalized and neglected intersections (56, 57); 2) addresses the role of stigma and inequity (e.g., political, material, and social) in defining social categories and their association with EAs' mental-emotional well-being (56, 57); and 3) identifies opportunities for intersectional solutions that recognize similarities and nuanced differences across diverse groups of EAs during their transition from adolescence to adulthood (57).

ACKNOWLEDGMENTS

Author affiliations: Division of Epidemiology and Community Health, University of Minnesota School of Public Health, Minneapolis, Minnesota, United States (Jaime Slaughter-Acey, Melissa Simone, Vivienne M. Hazzard, Katherine R. Arlinghaus, Dianne Neumark-Sztainer).

This research was supported by the National Heart, Lung, and Blood Institute (grant R35HL139853 (PI: D.N.S.)); the National Institute of Minority Health and Health Disparities (grant K99MD015770 (PI: M.S.)); the National Institute of Mental Health (grant T32MH082761 (PI: Scott Crow)); and the *Eunice Kennedy Shriver*

National Institute for Child Health and Human Development (grant L60 HD103047 (PI: J.S.A.)). K.R.A.'s time was supported by the National Institutes of Health's National Center for Advancing Translational Sciences (grants KL2TR002492 and UL1TR002494).

Survey questionnaires for the EAT 2010 and 2018 surveys are openly available: https://www.sph.umn.edu/research/projects/project-eat/for-researchers/. Data from EAT 2010 and 2018 are available upon request by visiting: https://www.sph.umn.edu/research/projects/project-eat/for-researchers/.

The content and any opinions expressed are those of the authors alone and should not be construed to represent the views of the National Institutes of Health.

Conflict of interest: none declared.

REFERENCES

1. Kessler RC, Wang PS. The descriptive epidemiology of commonly occurring mental disorders in the United States. *Annu Rev Public Health.* 2008;29(1):115–129.
2. Substance Abuse and Mental Health Services Administration. *Key Substance Use and Mental Health Indicators in the United States: Results From the 2020 National Survey on Drug Use and Health. (HHS Publication No.PEP21-07-01-003, NSDUH Series H-56)*. Rockville, MD: Center for Behavioral Health Statistics and Quality; 2021.
3. Emery RL, Johnson ST, Simone M, et al. Understanding the impact of the COVID-19 pandemic on stress, mood, and substance use among young adults in the greater Minneapolis-St. Paul area: findings from Project EAT. *Soc Sci Med.* 2021;276:113826.
4. Wood D, Crapnell T, Lau L, et al. Emerging adulthood as a critical stage in the life course. In: Halfon N, Forrest CB, Lerner RM, Faustman EM, eds. *Handbook of Life Course Health Development*. Cham, Switzerland: Springer; 2018: 123–143.
5. Tanner JL. Mental health in emerging adulthood. In: Arnett JJ, ed. *The Oxford Handbook of Emerging Adulthood*. New York, NY: Oxford University Press; 2015.
6. Arnett JJ. Emerging adulthood: a theory of development from the late teens through the twenties. *Am Psychol.* 2000;55(5): 469–480.
7. Lee DB, Anderson RE, Hope MO, et al. Racial discrimination trajectories predicting psychological well-being: from emerging adulthood to adulthood. *Dev Psychol.* 2020;56(7):1413–1423.
8. Mumford EA, Potter S, Taylor BG, et al. Sexual harassment and sexual assault in early adulthood: national estimates for college and non-college students. *Public Health Rep.* 2020; 135(5):555–559.
9. Larson N, Laska MN, Neumark-Sztainer D. Food insecurity, diet quality, home food availability, and health risk behaviors among emerging adults: findings from the EAT 2010–2018 study. *Am J Public Health.* 2020;110(9):1422–1428.
10. Hope EC, Hoggard LS, Thomas A. Emerging into adulthood in the face of racial discrimination: physiological, psychological, and sociopolitical consequences for African American youth. *Transl Issues Psychol Sci.* 2015;1(4): 342–351.
11. Frye AA, Liem JH. Diverse patterns in the development of depressive symptoms among emerging adults. *J Adolesc Resh.* 2011;26(5):570–590.
12. Fagrell Trygg N, Gustafsson PE, Månsdotter A. Languishing in the crossroad? A scoping review of intersectional inequalities in mental health. *Int J Equity Health.* 2019; 18(1):115.
13. Vines AI, Ward JB, Cordoba E, et al. Perceived racial/ethnic discrimination and mental health: a review and future directions for social epidemiology. *Curr Epidemiol Rep.* 2017;4(2):156–165.
14. Bowleg L. Evolving intersectionality within public health: from analysis to action. *Am J Public Health.* 2021;111(1): 88–90.
15. Crenshaw K. Mapping the margins: intersectionality, identity politics, and violence against women of color. *Stanford Law Rev.* 1990;6(6):1241–1300.
16. Crenshaw K. Demarginalizing the intersection of race and sex: a Black feminist critique of antidiscrimination doctrine, feminist theory and antiracist politics. *Univ Chic Leg Forum.* 1989;1:139–167.
17. Hooks B. *Feminist Theory: From Margin to Center*. New York, NY: Pluto Press; 2000.
18. Bowleg L. The problem with the phrase women and minorities: intersectionality—an important theoretical framework for public health. *Am J Public Health.* 2012; 102(7):1267–1273.
19. Slaughter-Acey JC, Saintil S. Hospitalization rates of children by developmental disability, maternal nativity, and Indigenous status: the complexity of intersectionality. *Dev Med Child Neurol.* 2020;62(4):409.
20. Bauer GR. Incorporating intersectionality theory into population health research methodology: challenges and the potential to advance health equity. *Soc Sci Med.* 2014;110: 10–17.
21. Cho S, Crenshaw KW, McCall L. Toward a field of intersectionality studies: theory, applications, and praxis. *Signs.* 2013;38(4):785–810.
22. Agénor M. Future directions for incorporating intersectionality into quantitative population health research. *Am J Public Health.* 2020;110(6):803–806.
23. Gkiouleka A, Huijts T, Beckfield J, et al. Understanding the micro and macro politics of health: inequalities, intersectionality & institutions—a research agenda. *Soc Sci Med.* 2018;200:92–98.
24. Collins PH. *Black Feminist Thought, 30th Anniversary Edition: Knowledge, Consciousness, and the Politics of Empowerment*. New York, NY: Routledge; 2022.
25. Galambos NL, Barker ET, Krahn HJ. Depression, self-esteem, and anger in emerging adulthood: seven-year trajectories. *Dev Psychol.* 2006;42(2):350–365.
26. MacBeth A, Gumley A. Exploring compassion: a meta-analysis of the association between self-compassion and psychopathology. *Clin Psychol Rev.* 2012;32(6): 545–552.
27. Liu Q, Jiang M, Li S, et al. Social support, resilience, and self-esteem protect against common mental health problems in early adolescence: a nonrecursive analysis from a two-year longitudinal study. *Medicine (Baltimore).* 2021;100(4): e24334.
28. Evans CR, Williams DR, Onnela JP, et al. A multilevel approach to modeling health inequalities at the intersection of multiple social identities. *Soc Sci Med.* 2018;203:64–73.
29. Evans CR, Leckie G, Merlo J. Multilevel versus single-level regression for the analysis of multilevel information: the case of quantitative intersectional analysis. *Soc Sci Med.* 2020; 245:112499.

30. Mahendran M, Lizotte D, Bauer GR. Describing intersectional health outcomes: an evaluation of data analysis methods. *Epidemiology.* 2022;33(3):395–405.
31. Mahendran M, Lizotte D, Bauer GR. Quantitative methods for descriptive intersectional analysis with binary health outcomes. *SSM Popul Health.* 2022;17:101032.
32. Strobl C, Malley J, Tutz G. An introduction to recursive partitioning: rationale, application, and characteristics of classification and regression trees, bagging, and random forests. *Psychol Methods.* 2009;14(4):323–348.
33. Hothorn T, Hornik K, Zeileis A. Unbiased recursive partitioning: a conditional inference framework. *J Comput Graph Stat.* 2006;15(3):651–674.
34. Project EAT. Project EAT surveys. 2020; https://www.sph.umn.edu/research/projects/project-eat/for-researchers/. Accessed January 17, 2023.
35. Kandel DB, Davies M. Epidemiology of depressive mood in adolescents: an empirical study. *Arch Gen Psychiatry.* 1982; 39(10):1205–1212.
36. Rosenberg M. *Society and the Adolescent Self-Image*. Revised ed. Middletown, CT: Wesleyan University Press; 1989.
37. Neff KD. The self-compassion scale is a valid and theoretically coherent measure of self-compassion. *Mind.* 2016;7(1):264–274.
38. Portney LG, Watkins MP. *Foundations of Clinical Research: Applications to Practice*. Saddle River, NJ: Pearson/Prentice Hall Upper; 2009.
39. Simone M, Slaughter-Acey J, Hazzard VM, et al. Exploring the intersection of multiple social determinants of health and disordered eating behaviors in a population-based sample in the United States. *Int J Eat Disord.* 2022;55(11): 1589–1602.
40. Mantovani RG, Horváth T, Cerri R, et al. An empirical study on hyperparameter tuning of decision trees [preprint]. *arXiv.* 2018. https://doi.org/10.48550/arXiv.1812.02207. Accessed December 9, 2022.
41. Hothorn T, Zeileis A. Partykit: a modular toolkit for recursive partitioning in R. *J Mach Learn Res.* 2015;16(1):3905–3909.
42. Williams DR, Lawrence JA, Davis BA. Racism and health: evidence and needed research. *Annu Rev Public Health.* 2019;40(1):105–125.
43. Everett BG, Onge JS, Mollborn S. Effects of minority status and perceived discrimination on mental health. *Popul Res Policy Rev.* 2016;35(4):445–469.
44. Richardson T, Elliott P, Roberts R, et al. A longitudinal study of financial difficulties and mental health in a national sample of British undergraduate students. *Community Ment Health J.* 2017;53(3):344–352.
45. Hazzard VM, Barry MR, Leung CW, et al. Food insecurity and its associations with bulimic-spectrum eating disorders, mood disorders, and anxiety disorders in a nationally representative sample of U.S. adults. *Soc Psychiatry Psychiatr Epidemiol.* 2022;57(7):1483–1490.
46. Bowen S, Elliott S, Hardison-Moody A. The structural roots of food insecurity: how racism is a fundamental cause of food insecurity. *Sociol Compass.* 2021;15(7):e12846.
47. Schulz AJ, Gravlee CC, Williams DR, et al. Discrimination, symptoms of depression, and self-rated health among african american women in Detroit: results from a longitudinal analysis. *Am J Public Health.* 2006;96(7):1265–1270.
48. Dunn N, Inskip H, Kendrick T, et al. Does perceived financial strain predict depression among young women? Longitudinal findings from the Southampton Women's Survey. *Ment Health Fam Med.* 2008;5(1):15–21.
49. Myers CA. Food insecurity and psychological distress: a review of the recent literature. *Curr Nutr Rep.* 2020;9(2): 107–118.
50. Yang TC, Chen IC, Choi SW, et al. Linking perceived discrimination during adolescence to health during mid-adulthood: self-esteem and risk-behavior mechanisms. *Soc Sci Med.* 2019;232:434–443.
51. Bourguignon D, Seron E, Yzerbyt V, et al. Perceived group and personal discrimination: differential effects on personal self-esteem. *Eur J Soc Psychol.* 2006;36(5):773–789.
52. Liao KY, Kashubeck-West S, Weng CY, et al. Testing a mediation framework for the link between perceived discrimination and psychological distress among sexual minority individuals. *J Couns Psychol.* 2015;62(2):226–241.
53. Fredrick EG, LaDuke SL, Williams SL. Sexual minority quality of life: the indirect effect of public stigma through self-compassion, authenticity, and internalized stigma. *Stigma Health.* 2020;5(1):79–82.
54. Lett E, Asabor E, Beltrán S, et al. Conceptualizing, contextualizing, and operationalizing race in quantitative health sciences research. *Ann Fam Med.* 2022;20(2):157–163.
55. Scheim AI, Bauer GR. The Intersectional Discrimination Index: development and validation of measures of self-reported enacted and anticipated discrimination for intercategorical analysis. *Soc Sci Med.* 2019;226:225–235.
56. Borras AM. Toward an intersectional approach to health justice. *Int J Health Serv.* 2020;51(2):206–225.
57. Cole ER. Intersectionality and research in psychology. *Am Psychol.* 2009;64(3):170–180.
58. Price R, Choi J, Vinokur A. Links in the chain of adversity following job loss. *J Occup Health Psychol.* 2002;7(4): 302–312.
59. Essed P. *Understanding Everyday Racism: An Interdisciplinary Theory*. Vol. 2. Newbury Park, CA: Sage Publications; 1991.
60. Williams DR, Yu Y, Jackson JS, et al. Racial differences in physical and mental health socio-economic status, stress and discrimination. *J Health Psychol.* 1997;2(3):335–351.