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Eating disorder pathology in a sample of midlife and older adults experiencing food insecurity

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Abstract

Researchers have recently identified food insecurity (FI) as a risk factor for eating disorder pathology (EDP). Yet, associations between FI and EDP remain understudied in midlife and older adults. The current study is a descriptive and exploratory re-analysis of Becker et al. (2017, 2019), investigating prevalence rates of EDP and differences in EDP between midlife and older adult food bank clients. Additionally, we examined the relations between FI severity and EDP in each age group. Participants included 292 midlife (51–65 years) and 267 older adults (66+) who were clients of a local foodbank. All participants completed a self-report questionnaire inquiring about FI, EDP, and demographic information. Overall, 8.9 % of respondents had a probable eating disorder (10.5 % of midlife adults, 5.6 % of older adults). Binge eating was the most endorsed EDP. Significantly more midlife adults reported night eating and skipping two meals in a row versus older adults. Additionally, FI severity level was associated with higher risk of night eating, BE, skipping two meals in a row, and laxative use in midlife adults. These same associations were significant for older adults, with the addition of vomiting and exception of laxative use. Evidently, the relations between FI and EDP seen in younger populations extends into mid and late-life, with minimal differences between midlife and older adults living with FI. It is imperative

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Savannah C. Hooper – Conceptualization and methodology of current study, formal analysis, data curation, writing – original draft, writing – review and editing, visualization

Lisa Smith Kilpela – Conceptualization of current study, formal analysis, writing – review and editing, supervision

Francesca Gomez – Conceptualization, methodology, and project administration of original studies (Becker et al., 2017, 2019), data curation, writing – reviewing

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Declaration of competing interest

The authors have no declarations of interest.

that we intentionally include midlife and older adults in FI and EDP research, investigating how best to address disordered eating across the lifespan within the context of experiencing FI.

Keywords

Food insecurity; Eating disorder pathology; Older adults; Midlife adults

In recent years, researchers have identified food insecurity (FI) as a risk factor for eating disorder pathology (EDP). There is strong evidence that dietary restraint frequently precedes EDP (e.g., Keys et al., 1950). Though the eating disorders literature has historically focused on dietary restraint due to body image concerns, it is likely that dietary restraint due to environmental factors, such as FI, can also lead to disordered eating. Individuals living with FI often experience fluctuations in food availability which may lead to a “feast-or-famine” cycle; individuals restrict their eating when food is scarce, which may contribute to a restriction and binge eating pattern once food is available again (Hazzard et al., 2020; Tester et al., 2016). Parents living with FI also may restrict even when food is available so that food is reserved for children (Middlemass et al., 2021).

Significant recent research supports the contention that FI is associated with increased dietary restraint, weight stigma, vomiting, binge eating (BE) severity, and binge eating disorder in adults (Becker et al., 2017, 2019; Rasmusson et al., 2019; Stinson et al., 2018). Additionally, college students with FI report higher rates of eating disorders (EDs) versus food secure individuals (Christensen et al., 2021). Finally, FI is associated with a higher frequency of BE episodes, greater loss of control eating, and more weight-control behaviors in adolescents (Hazzard et al., 2022; Kim et al., 2021; West et al., 2021).

Despite this burgeoning literature, associations between FI and EDP remain understudied in midlife (approximately ages 45–64; Ory et al., 2014; Miller et al., 2020) and older adults (approximately ages 65+; Ory et al., 2014; Miller et al., 2020). Yet, these populations may be unique in their vulnerability to EDP for several reasons. First, middle-aged adults (often dubbed the ‘sandwich generation’) frequently provide caregiving for children and aging family members (Miller et al., 2020). When food is scarce, caregivers frequently forgo eating to feed others, thus increasing risk for EDP. Indeed, Miller et al. (2020) found that midlife adults had the highest rates of FI across various age groups. Second, midlife (independent of FI) may be a window of vulnerability for developing EDs among women, due to significant life events and hormonal changes (e.g., menopause, empty nest) (Samuels et al., 2019). This vulnerability may be heightened in midlife women living with FI, and therefore warrants investigation.

Furthermore, scant research has examined EDP in older adults. Although older adults are less likely to experience FI than are midlife adults (perhaps due to buffers like caregivers or governmental assistance) (Miller et al., 2020; Nicholson et al., 2021), the potential impact of FI on EDP in this age group is unknown. EDP could persist, worsen, or improve after midlife in older adults living with FI. While little is known about EDP in older men, research identified rates of regular BE ranging from 12 to 26 % in older women (Thompson

& Bardone-Cone, 2019; Wilfred et al., 2021), which are comparable to or higher than BE rates in midlife women (Marcus et al., 2007).

In sum, evidence suggests there may be a unique vulnerability for EDP in midlife adults experiencing FI that may or may not extend into later life. To date, no studies examining EDP in FI samples have focused on midlife and older adults. Midlife and older adults are frequently overlooked in ED research, despite high EDP prevalence that could be exacerbated by FI. Thus, the current study is a descriptive and exploratory re-analysis of Becker et al. (2017, 2019), investigating EDP in midlife and older adults experiencing FI. Both Becker et al., 2017 and 2019 examined the differences in EDP across levels of FI severity in adult samples ages 18+, finding that the most severe FI group experiences greater EDP. However, no attention was dedicated to how findings might differ with age in these samples or how midlife and older adults might be uniquely impacted. Thus, Aim 1 for the current study is to describe EDP prevalence rates and investigate differences in EDP between midlife and older adults. Aim 2 is to investigate the relations between FI severity and EDP in each age group.

1. Methods

Participants included 292 midlife (51–65 years) and 267 older adults (66+ years) from Becker et al., 2017 and 2019 (total $N = 559$). Of note, Becker et al. (2017) only collected age in the following categories: under 25, 25–50, 51–65, 66–75, and 75+. Thus, we could not include midlife individuals younger than 51 in the current sample as they could not be identified from the age categories used in the original data collection. However, midlife has also been defined as 50–64 by the Center for Disease Control among other organizations; we used a similar categorization as this most closely matches our current data (NIH Prevention Research in Midlife Adults, n.d.). All participants were clients of the San Antonio Food Bank (SAFB).

Of the total sample, 68.5 % identified as female, 67.6 % as Latino/Hispanic, 5.7 % had bachelor's degree or higher, 32 % reported being married or living with a partner, and 53.8 % had an annual household income of <\$10,000 (Table 1). Additionally, one-way ANOVAs and Mann-Whitney U tests were conducted to examine potential demographic differences between age groups. Only education and marital status significantly differed (p 's < 0.001); gender, income, and race/ethnicity did not differ between midlife and older adults.

1.1. Procedures

1.1.1. Sample 1 (Becker et al., 2017)—This study received Institutional Review Board (IRB) approval and was run in collaboration with the SAFB. Research assistants (RAs) visited SAFB partner agencies and were introduced by staff to groups of clients waiting for food. Participants had to be at least 18 years old; there were no other exclusion criteria. RAs provided standardized information to clients who expressed interest in the study. All materials and scripts were provided in English and Spanish; during all data collection at least 2 RAs onsite were bilingual in English and Spanish. Following informed consent, RAs remained nearby to answer questions, or help read the questionnaire if participants reported difficulty. Participants completed a questionnaire including measures of

FI, EDP, and demographic questions. Participants received a \$5 gift card to a local grocery chain and a list of free/low-cost mental health resources (see Becker et al., 2017).

1.1.2. Sample 2 (Becker et al., 2019)—This study received IRB approval and operated in partnership with the SAFB. Using similar procedures as listed above, RAs approached SAFB clients in the waiting area of the SAFB headquarters using a standardized script, obtained informed consent, provided the same materials in English and Spanish, and remained nearby for assistance as needed. At least 2 RAs who were bilingual in English and Spanish were present any time data were collected. Participants had to be ages 18+, but there were no other exclusion criteria. Participants received a \$7 gift card to a local grocery store and low-cost/free mental-health resources (see Becker et al., 2019).

1.2. Measures

Participants reported age, gender, race/ethnicity, household income, government assistance, and other demographic information (Table 1). To assess FI, we used the Radimer Cornell Food Insecurity Measure (RCIFM; Kendall et al., 1995; Radimer et al., 1992). The RCIFM divides FI into four levels: 1) food secure, 2) household FI (i.e., running out of food, anxiety about food, eating the same thing repeatedly due to lack of resources), 3) individual FI (i.e., being hungry at times because there is not enough food), and 4) child hunger household FI (CHH-FI) (i.e., inability to feed children secondary to lack of resources). Of note, we refer to participants in the current study that are in the ‘Food Secure’ category of the RCFIM as ‘Not Food Insecure’ because they are likely living on the margins of FI if they are seeking food services at a food bank. CHH-FI is considered the most severe as it is assumed that if children are hungry, adults are likely to forgo eating to feed their children and are presumably hungrier. The RCIFM has sound construct validity and internal consistency (Kendall et al., 1995; current $\alpha = 0.91$).

We used the self-report Eating Disorder Diagnostic Scale for DSM-5 which is a brief measure designed to assess the spectrum of EDs (EDDS-5; American Psychiatric Association, 2013; Stice et al., 2004). Assessed behaviors included BE, self-induced vomiting, laxative use, night eating, skipped two meals in a row, and compensatory exercise (Table 2). Participants were asked how many times on average over the past month (30–31 days) they engaged in each behavior. Participants circled frequency of each behavior on a scale from 0 to 16+ times. We omitted height and weight questions. A composite score of 16.5 or greater signifies a probable ED (see Becker et al., 2017 for further discussion). Though the EDDS-5 has not been psychometrically evaluated since being updated for the DSM-5, previous versions are well validated. The EDDS has demonstrated criterion validity with interview-based diagnoses, convergent validity with ED risk factors, and strong internal consistency (Stice et al., 2004; current $\alpha = 0.91$).

Because individuals living with FI frequently have lower levels of education, some questions were adjusted to match a sixth-grade reading level. The questionnaires were translated into Spanish and back translated by an independent bilingual consultant to ensure the meanings were equivalent in Spanish and English. A second bilingual consultant who grew up in San Antonio provided feedback to ensure no constructs were confusing and a few minor

changes were made to reflect the San Antonio-based Spanish dialect (which is a derivative of Mexican Spanish). The full questionnaire packet was then piloted with both English and Spanish speakers; further adjustments were made based on feedback. Finally, the team consulted with a local bilingual speaker whose first language was Spanish and highest level of education was first grade. Though the Spanish versions of these questionnaires were not formally validated, the translation process was careful and extensive (see Becker et al., 2017, 2019).

1.3. Analyses

To investigate Aim 1, we used the cutoff score of 16.5 for the EDDS-5 to determine prevalence of a probable eating disorder in the total sample and within the two age groups. We conducted a 2×2 chi-square test to evaluate if there was a significant difference between rates of probable EDs between age groups. We also examined the presence (including subthreshold and clinical frequencies) of six different eating behaviors both in the total sample and within age groups: binge eating, self-induced vomiting, laxative use, skipping two meals in a row, night eating, and compensatory exercise. We conducted 2×2 chi-square tests to examine differences in the presence (coded as 0 if participants did not endorse the behavior, 1 if endorsed at least once) of the six ED behaviors between age groups. For Aim 2, we conducted binary logistic regressions examining the relations between FI severity level and likelihood of engaging in the same six ED behaviors in each age group, covarying for race/ethnicity and gender.

2. Results

It is important to first provide context of the level of FI severity in this sample. In total, 87.8 % of individuals in this sample were food insecure. As mentioned previously, because all participants were clients of a food bank, it is likely that participants who did not meet criteria for FI according to the assessment were still likely living on the margins of FI. For this reason, we refer to them as Not Food Insecure. In midlife adults, 33.9 % met criteria for Household FI, 28.3 % for Individual FI, and 28.3 % for CHH; 22.5 % of older adults met criteria for Household FI, 36.5 % for Individual FI, and 23 % for CHH (Table 1). There were no significant differences between FI severity between age groups ($p = ns$).

Regarding Aim 1, 8.9 % of the total sample had a probable ED, including 10.5 % of midlife and 5.6 % of older adults; prevalence of a probable ED did not differ between the two age groups ($p = ns$). Almost half of the total sample reported BE at least once in the past month, 11.4 % reported self-induced vomiting, 14 % reported laxative use, 35.8 % reported skipping two meals in a row, 27.2 % reported night eating, and 23.8 % reported compensatory exercise (Table 2). Only two behaviors significantly differed between age groups: night eating ($p = .004$) and skipping two meals ($p = .002$); midlife adults reported more EDP.

We investigated the relationship between FI severity and EDP within each age group as our second aim. Among midlife adults, FI severity level was associated with higher risk of night eating (OR = 1.40, 95 % CI [1.10, 1.77]), laxative use (OR = 1.51, 95 % CI [1.11, 2.06]), skipping two meals in a row (OR = 1.47, 95 % CI [1.18, 1.85]), BE (OR = 1.45, 95 % [1.16, 1.81]), and compensatory exercise (OR = 1.32, 95 % CI [1.03, 1.69]).

Risk for self-induced vomiting was nonsignificant. Regarding covariates, African American/Black midlife adults were more likely to endorse night eating compared to Hispanic/Latino participants (OR = 1.93, 95 % CI [1.01, 3.69]).

Similarly, FI severity was associated with greater risk of night eating (OR = 1.86, 95 % CI [1.22, 2.83]), self-induced vomiting (OR = 2.36, 95 % CI [1.31, 4.24]), skipping two meals (OR = 1.45, 95 % CI [1.01, 2.08]), BE (OR = 1.47, 95 % CI [1.07, 2.02]), and compensatory exercise (OR = 1.69, 95 % CI [1.12, 2.53]) in older adults. Risk for laxative use was nonsignificant. Regarding covariates, older adults were more likely to use laxatives if they endorsed “Other” race versus Hispanic/Latino participants (OR = 5.67, 95 % CI [1.32, 24.31]). Older women had lower odds of reporting self-induced vomiting (OR = 0.23, 95 % CI [0.08, 0.68]) and skipping two meals in a row than men (OR = 0.33, 95 % CI [0.16, 0.71]).

3. Discussion

The purposes of the current study were to highlight the prevalence of EDP in midlife and older adults experiencing FI and the relations between FI and EDP between these under-researched age groups. Overall, the percentage of individuals with a probable ED in the total sample was high and greater in midlife adults than older adults in this sample. BE was the most common ED behavior in both age groups, which is consistent with general community samples (Gagne et al., 2012). While laxative use and self-induced vomiting were less common than BE, the prevalence of these behaviors was still higher in this sample than in community samples (Thompson & Bardone-Cone, 2019). Findings suggest that rates of EDs and EDP in FI samples are elevated across the age spectrum.

Regarding age differences, significantly more midlife than older adults endorsed night eating and skipping two meals in a row. It is important to consider how the prevalence of these ED behaviors may be influenced by caregiving roles for midlife adults (e.g., skipping meals to feed family members). For instance, this may be reflective of multigenerational midlife caregiving responsibilities. Midlife adults may preserve food for their minor and/or older dependents, which may be protective of FI for older adults, but which may also increase risk for EDP in midlife adults. Indeed, a greater proportion of older adults were categorized as not FI versus midlife adults categorized as not FI in this sample. Still, older adults living with FI reported higher rates of EDP than community samples (Thompson & Bardone-Cone, 2019). Thus, more research is needed to better understand factors that protect or promote FI in midlife versus older adults (e.g., older adults living in multigenerational homes versus alone).

Finally, FI severity was associated with higher odds of engaging in most ED behaviors in both age groups, except self-induced vomiting in midlife adults and laxative use in older adults. Thus, findings suggest some discrepancies in how FI associates with different ED behaviors by age. Additionally, race/ethnicity and gender were significantly related to EDP. African American/Black midlife participants had higher odds of night eating than did Hispanic/Latino midlife participants. Older adult participants who selected “Other” for race had higher odds of laxative use than did Hispanic/Latino older adult participants. Regarding

gender, older women were less likely to report self-induced vomiting or skipping two meals versus older men. Overall, more research is needed to identify sociodemographic risks for EDP when living with FI.

Limitations to the present study include underrepresentation of other racial/ethnic minorities, despite a majority proportion of Hispanic/Latino participants. Thus, investigation into FI and EDP in other racial/ethnic minorities in this sample was limited. Additionally, this is a sample of adults in the southern United States and in an urban setting. How these findings generalize to other states, non-US countries, and rural settings is unknown. Due to limitations with how age data was collected, we also missed individuals who are still in midlife but younger than age 51. We modified measures to enhance readability for our sample (e.g., from an 18th-grade readability score to a sixth-grade reading level), which may affect psychometric properties; however, internal consistency values remained acceptable. Furthermore, the data from the compensatory exercise question in the EDDS-5 should be interpreted with caution as the construct validity of self-reported compensatory exercise in older adult populations is unknown. For instance, the interpretation of what it means to exercise more intensely may be different in older populations. Alternatively, the act of exercising more intensely to compensate for overeating may look different in this population compared to in younger adults. It is also important to note that because this is a cross-sectional study, we are unable to extrapolate causality or chronology of behavioral patterns.

Finally, this sample was majority women. This may indicate more women seek food assistance at food banks. Research does suggest that women experience higher rates of both EDP and FI (Broussard, 2019; Jung et al., 2017). Thus, having a majority female sample may affect our findings. Future research should further investigate gender differences in FI and EDP in midlife and older adults, examining gender specific factors (e.g., menopause) that may influence this relationship.

In sum, the relations between FI and EDP seen in younger populations extends into midlife and older adulthood, with minimal differences between midlife and older adults living with FI. While government benefits and caretakers may buffer older adults from FI, the relation between FI and EDP remains robust. Additionally, midlife adults may face even greater risk for EDP. Thus, it is imperative that we intentionally include midlife and older adults in FI and EDP research, investigating how best to address disordered eating across the lifespan within the context of experiencing FI.

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Data availability

Data will be made available on request.

References

- American Psychiatric Association. (2013). *Diagnostic and statistical manual of mental disorders* (5th ed.). Washington, DC: Author.
- Becker CB, Middlemass K, Taylor B, Johnson C, & Gomez F (2017). Food insecurity and eating disorder pathology. *International Journal of Eating Disorders*, 50(9), 1031–1040. 10.1002/eat.22735 [PubMed: 28626944]
- Becker CB, Middlemass KM, Gomez F, & Martinez-Abrego A (2019). Eating disorder pathology among individuals living with food insecurity: A replication study. *Clinical Psychological Science*, 7(5), 1144–1158. 10.1177/2167702619851811
- Broussard NH (2019). What explains gender differences in food insecurity? *Food Policy*, 83, 180–194.
- Christensen KA, Forbush KT, Richson BN, Thomeczek ML, Perko VL, Bjorlie K Mildrum Chana S., ... (2021). Food insecurity associated with elevated eating disorder symptoms, impairment, and eating disorder diagnoses in an American University student sample before and during the beginning of the COVID-19 pandemic. *International Journal of Eating Disorders*, 54(7), 1213–1223. 10.1002/eat.23517 [PubMed: 33885180]
- Gagne DA, Von Holle A, Brownley KA, Runfola CD, Hofmeier S, Branch KE, & Bulik CM (2012). Eating disorder symptoms and weight and shape concerns in a large web-based convenience sample of women ages 50 and above: Results of the gender and body image (GABI) study. *International Journal of Eating Disorders*, 45(7), 832–844. 10.1002/eat.22030 [PubMed: 22729743]
- Hazzard VM, Hooper L, Larson N, Loth KA, Wall MM, & Neumark-Sztainer D (2022). Associations between severe food insecurity and disordered eating behaviors from adolescence to young adulthood: Findings from a 10-year longitudinal study. *Preventive Medicine*, 154, Article 106895. 10.1016/j.ypmed.2021.106895 [PubMed: 34800473]
- Hazzard VM, Loth KA, Hooper L, & Becker CB (2020). Food insecurity and eating disorders: A review of emerging evidence. *Current Psychiatry Reports*, 22, 1–9. [PubMed: 31912372]
- Jung NM, de Bairois FS, Pattussi MP, Pauli S, & Neutzling MB (2017). Gender differences in the prevalence of household food insecurity: A systematic review and meta-analysis. *Public Health Nutrition*, 20(5), 902–916. [PubMed: 27829486]
- Kendall A, Olson CM, & Frongillo EA Jr. (1995). Validation of the Radimer/Cornell measures of hunger and food insecurity. *The Journal of Nutrition*, 125, 2793–2801. 10.1093/jn/125.11.2793 [PubMed: 7472659]
- Keys A, Brožek J, Henschel A, Mickelsen O, & Taylor HL (1950). *The biology of human starvation*. 2.
- Kim BH, Ranzenhofer L, Stadterman J, Karvay YG, & Burke NL (2021). Food insecurity and eating pathology in adolescents. *International Journal of Environmental Research and Public Health*, 18(17), 9155. 10.3390/ijerph18179155 [PubMed: 34501745]
- Marcus MD, Bromberger JT, Wei HL, Brown C, & Kravitz HM (2007). Prevalence and selected correlates of eating disorder symptoms among a multiethnic community sample of midlife women. *Annals of Behavioral Medicine*, 33(3), 269–277. 10.1007/BF02879909 [PubMed: 17600454]
- Middlemass KM, Cruz J, Gamboa A, Johnson C, Taylor B, Gomez F, & Becker CB (2021). Food insecurity & dietary restraint in a diverse urban population. *Eating Disorders*, 29(6), 616–629. 10.1080/10640266.2020.1723343 [PubMed: 32129723]
- Miller LMS, Tancredi DJ, Kaiser LL, & Tseng JT (2020). Midlife vulnerability and food insecurity: Findings from low-income adults in the US National Health Interview Survey. *PLoS one*, 15(7), Article e0233029. 10.1371/journal.pone.0233029 [PubMed: 32658927]
- Nicholson J, Villamor M, & Wright L (2021). A developmental lens on food insecurity: The role of children in the household and age groups on food insecurity impacting mental health. *Aging & Mental Health*, 1–10. 10.1080/13607863.2021.1989376 [PubMed: 31647324]
- Ory MG, Anderson LA, Friedman DB, Pulczynski JC, Eugene N, & Satariano WA (2014). Cancer prevention among adults aged 45–64 years: Setting the stage. *American Journal of Preventive Medicine*, 46(3), S1–S6. [PubMed: 24512925]
- Radimer KL, Olson CM, Greene JC, Campbell CC, & Habicht JP (1992). Understanding hunger and developing indicators to assess it in women and children. *Journal of Nutrition Education*, 24, 36S–44S. 10.1016/S0022-3182(12)80137-3

- Rasmusson G, Lydecker JA, Coffino JA, White MA, & Grilo CM (2019). Household food insecurity is associated with binge-eating disorder and obesity. *International Journal of Eating Disorders*, 52(1), 28–35. 10.1002/eat.22990
- Samuels KL, Maine MM, & Tantillo M (2019). Disordered eating, eating disorders, and body image in midlife and older women. *Current Psychiatry Reports*, 21(8), 1–9. 10.1007/s11920-019-1057-5 [PubMed: 30637488]
- Stice E, Fisher M, & Martinez E (2004). Eating disorder diagnostic scale: Additional evidence of reliability and validity. *Psychological Assessment*, 16, 60–71. 10.1037/1040-3590.16.1.60 [PubMed: 15023093]
- Stinson EJ, Votruba SB, Venti C, Perez M, Krakoff J, & Gluck ME (2018). Food insecurity is associated with maladaptive eating behaviors and objectively measured overeating. *Obesity*, 26(12), 1841–1848. 10.1002/oby.22305 [PubMed: 30426695]
- Tester JM, Lang TC, & Laraia BA (2016). Disordered eating behaviours and food insecurity: A qualitative study about children with obesity in low-income households. *Obesity Research & Clinical Practice*, 10(5), 544–552. [PubMed: 26689335]
- Thompson KA, & Bardone-Cone AM (2019). Disordered eating behaviors and attitudes and their correlates among a community sample of older women. *Eating Behaviors*, 34, Article 101301. 10.1016/j.eatbeh.2019.05.004 [PubMed: 31153025]
- West CE, Darling KE, Ruzicka EB, & Sato AF (2021). Household income and loss of control eating in adolescence: Examining the role of food insecurity. *Appetite*, 165, Article 105291. 10.1016/j.appet.2021.105291 [PubMed: 33961934]
- Wilfred SA, Becker CB, Kanzler KE, Musi N, Espinoza SE, & Kilpela LS (2021). Binge eating among older women: Prevalence rates and health correlates across three independent samples. *Journal of Eating Disorders*, 9(1), 132. 10.1186/s40337-021-00484-8 [PubMed: 34666821]

Table 1

Participant demographics summarized for the total sample and by age group.

Demographic	Total sample <i>N</i> = 559		Midlife (51–65) <i>n</i> = 381		Older adults (66+) <i>n</i> = 178	
	<i>n</i>	%	<i>n</i>	%	<i>n</i>	%
Gender						
Male	172	30.8	114	29.9	58	32.6
Female	384	68.7	266	69.8	118	66.3
Ethnicity						
Latino/Hispanic	378	67.6	260	68.2	118	66.3
Black/African American	69	12.3	47	12.3	22	12.4
White/Caucasian	65	11.6	43	11.3	22	12.4
Other ^b	40	7.3	27	7	13	7.4
Food Insecurity ^a						
Not food insecure	68	12.2	36	9.4	32	18
Household FI	169	30.2	129	33.9	40	22.5
Individual FI	179	30.9	108	28.3	65	36.5
Child Hunger	149	26.7	108	28.3	41	23
Education						
No or some grade school	93	16.6	51	13.4	42	23.6
Finished grade school	44	7.9	19	5	5	14
Some high school	98	17.5	72	18.9	26	14.6
High school/GED	163	29.2	119	31.2	44	24.7
Some college or technical	125	22.4	91	23.9	34	19.1
Bachelor +	32	5.7	25	6.6	7	4
Annual Household Income						
< \$10,000	301	53.8	209	54.9	92	51.7
\$10,000–\$40,000	211	37.7	142	37.3	69	38.8
\$40,000–\$65,000	14	2.5	10	2.6	4	2.2
\$65,000+	3	0.53	1	0.26	2	1.1
Marital Status						
Single	144	25.8	107	28.1	37	20.8
Married/Living with Partner	179	32	126	33.1	53	29.8
Divorced or separated	142	25.4	102	26.8	40	22.5
Widowed	92	16.5	44	11.5	48	27
Children in the Household						
0	284	50.8	189	49.6	95	53.4
1	82	14.7	63	16.5	19	10.7
2	62	11.1	46	12.1	16	9
3	42	7.5	27	7.1	15	8.4
4 or more	66	7.3	25	7.7	14	7.9
Employment Status						
Disabled	242	43.3	173	45.4	69	38.8

Demographic	Total sample <i>N</i> = 559		Midlife (51–65) <i>n</i> = 381		Older adults (66+) <i>n</i> = 178	
	<i>n</i>	%	<i>n</i>	%	<i>n</i>	%
Not working	145	25.9	109	28.6	36	20.2
Part-time	60	10.7	50	13.1	10	5.6
Full-time	39	7	34	8.9	5	2.8
Retired/Homemaker	145	25.9	53	13.9	92	51.7
Government Assistance ^c						
Social Security	255	45.6	112	29.4	143	80.3
SSI	121	21.6	75	19.7	46	25.8
Medicare	149	26.7	62	16.3	87	48.9
Medicaid	119	21.3	77	20.2	42	23.6
SNAP	174	31.1	139	36.5	35	19.7
Other	103	18.4	71	18.7	32	17.9

^a A Mann-Whitney-U was conducted - there were no significant difference in FI between age groups.

^b Some racial groups were collapsed into 'other' due to small sample sizes, including Asian, Native American, Pacific Islander, Indigenous/Aboriginal.

^c Participants could endorse having more than one form of governmental assistance.

Table 2

Disordered eating behaviors endorsed in the past month summarized for the total sample and by age group.

Behavior	Total <i>N</i> = 559		Midlife (51–65) <i>n</i> = 381		Older Adult (66+) <i>n</i> = 178	
	<i>n</i>	%	<i>n</i>	%	<i>n</i>	%
Binge eating	249	44.5	177	46.5	72	40.4
Clinical frequency	95	17	74	19.4	21	11.8
Self-induced Vomiting	64	11.4	46	12.1	18	10.1
Clinical frequency	27	4.8	19	5	8	4.5
Laxatives	78	14	59	15.5	19	10.7
Clinical frequency	31	5.5	21	5.5	10	5.6
Compensatory exercise	133	23.8	96	25.2	37	20.8
Clinical frequency	52	9.3	36	9.4	16	9.0
Skipped 2 meals in a row	200	35.8	154	40.4	46	25.8
Night Eating	152	27.2	119	31.2	33	18.5

Notes. The prevalence of disordered eating behaviors includes individuals who selected “Yes” for engaging in a behavior in the last month. Clinical frequency indicates the prevalence of individuals endorsing a behavior four or more times in the past month (for behaviors with this clinical frequency defined in the DSM-5).