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Intergenerational Coresidence and Mothers' Body Weight at Midlife

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Abstract

Midlife mothers report their children returning to the maternal home after departing (i.e., boomerang children) and remaining in the maternal home longer (i.e., never-left children) than the past half century. Over the same time period, the percent of Americans considered overweight and obese have increased. Yet, we know very little about how such delays affect the body weight of mothers. The current study uses the National Survey of Youth 1979 (NLSY79) and its corresponding young adult sample (NLSY79-YA) across 20 consecutive years ($N=7,197$) to determine if extended coresidence with an adult child is associated with midlife mothers' body weight changes. Results from multilevel regression models show that compared to mothers whose young adult children left home and never returned ("gone-for-good"), mothers of the "never-left" had higher body weight at 40 but similar body weight at 50. Mothers of the boomerangers had higher body weight relative to mothers of the "gone-for-good" across midlife. Mothers of the boomerangers and mothers of the "never-left" had similar weight at age 40 but the former group had more weight gain across midlife. These findings lend new insight into how different patterns of mother-young adult coresidence likely affect the health of mothers, and suggests the effects of recent demographic trends such as "failure to launch" on family formation and functioning should be viewed holistically with a more inclusive sociological lens.

Keywords

Intergenerational coresidence; body weight/BMI; life course and stress process perspectives; multilevel modeling

A moderate midlife body weight is associated with favorable health outcomes including lower morbidity and extended longevity (Breeze et al. 2006). Consequently, the dramatic increase in the overweight and obese population since 1960s has been a major public health concern in the United States (Wang and Beydoun 2007). In fact, more than two thirds of US adults are overweight ($BMI \geq 25$) and about 38% are obese ($BMI \geq 30$) (Flegal et al. 2016), and American women today are obese for a longer duration of their lives (Lee et al. 2010). Additionally, recent reports suggest that the obesity rate is highest among middle-aged

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American women (early 40s to mid 60s) relative to women in all the other age groups (Mendes 2010). Sociologists argue that body weight variations are conditioned by social contexts, yet, the social determinants that are associated with body weight among midlife American women remain understudied.

One important social context for midlife women that may shape body weight is their coresidential and non-coresidential relationships with their adult children. Nest-leaving of adult children is a historically key experience for midlife parents. Over the past two decades, however, demographers have noted drastic changes in home departure behavior, including high rates of what are known as “boomerang” children who return to the maternal home after departing, as well as the “never-left” who have remained in the maternal home longer than expected. Boomerang and never-left coresidential patterns appear to buffer young adults from economic shocks (e.g., economic recession, unemployment) and do not negatively affect young adults’ emotional and psychological well-being (Copp et al. 2015; Fingerman et al. 2016). Yet, what remains unknown is how these changing coresidential patterns affect the well-being—including body weight—of the other family member in the coresidential home: mothers. A life course perspective argues intergenerational coresidential patterns are very likely to affect mothers’ body weight due to the generations’ linked lives (Umberson et al. 2011). A stress perspective further suggests that midlife mothers may experience coresidential patterns with their adult children as stressful, which in turn may affect body weight (Milkie, Bierman, and Schieman 2008). Yet, virtually no empirical research examines the potential relationship between these emerging coresidential patterns and midlife maternal body weight.

In order to fill this research gap, this study asks: How are intergenerational coresidential biographies during mother’s midlife associated with one key health outcome: mothers’ body weight trajectories? Body weight index (BMI) is a key indicator of health at midlife and is sensitive to life course changes including the parent-child relationship, and thus provides the ideal lens to examine the proposed effects of coresidence (Umberson et al. 2011). This study sheds light on the intricate link between notable changes in family demographics and an important dimension of health among midlife women.

BACKGROUND

Adult weight trajectories follow a slight upward trend across the life course (Adams and Schoenborn 2006), wherein a relative moderate body weight (non-overweight) with a stable (or slightly increasing) trajectory suggests good and stable health whereas a dramatically fluctuating body weight suggests significant health change in response to various negative life events (Baltrus et al. 2005). Previous research has established that motherhood is strongly associated with body weight changes across the life course, with this research focusing on the effects of parenting young children on parental body weight. For example, Laroche and colleagues (2013) find that living with young children (under five years old) is associated with accelerated weight gain among mothers relative to fathers and childless women across their young adulthood (18 to 30). This is likely because parenting young children is associated with a higher-calorie diet (e.g., higher levels of fat, sugar, and meat) and less physical activity (Berge et al. 2011; Elstgeest, Mishra and Dobson

2012; Nomaguchi and Bianchi 2004). In one of the few studies that examined the effects of parenting and mothers' body weight as children age into adulthood, Umberson and colleagues (2011) found coresidence with adult children was associated with higher body weight at the baseline, further showing that the departure of adult children is associated with greater weight gain for both fathers and mothers. Yet, Umberson and colleagues focused on an older cohort of parents (born between 1890 and 1962) and did not examine how young adults' emerging coresidential patterns were related to mothers' body weight change for the current cohort of midlife women. Due to drastic changes in both coresidential patterns and body weight trajectories for the current cohort of midlife mothers, a focused look on body weight and motherhood for midlife parents today is imperative.

More specifically, this prior research (Laroche et al. 2013; Umberson et al. 2011) conceptualizes the association between body weight and parenthood as a gradual and incremental process by modeling body weight as body mass index (BMI). Additionally, the effects of stress on BMI are well defined and provide an additional plausible pathway through which young adult coresidential trajectories are likely to impact mother's wellbeing (Torres & Nowson, 2007; Block et al., 2009). Therefore, our study examines mother's BMI changes across midlife in relation to mother-child coresidential patterns. In order to theorize this relationship across different coresidential patterns, below we outline life course and stress process perspectives that likely underlie coresidence and maternal body weight.

Intergenerational Coresidence and Mother's Body Weight

Intergenerational coresidence trajectories are efficient indicators of children's transitioning pathways to young adulthood (Houle and Warner 2017; Sassler, Ciambrone and Benway 2008). These patterns are uniquely established during mother's midlife, and thus are likely key to maternal body weight changes during this life stage (Grossman 2005; Newman 2012). Three primary types of intergenerational coresidential patterns have gained prevalence in the past two decades in the U.S. and are likely to have differential impact on maternal body weight: (1) children who left the parental household and never returned between ages 18–30 (i.e., the “gone-for-good”), (2) children who exited and came back at least once between the ages of 18–30 (i.e., “boomerangers”), and (3) children who did not exit parental household between the typical years of exit, 18–30 (i.e., prolonged coresidence, or the “never-left”) (Burn and Szoek 2016; Copp et al. 2015; Newman 2012). We choose age 18 and 30 as the beginning and end points to define coresidential patterns among young adults for a number of reasons. Age 18 is selected as a starting point of a coresidential trajectory because this is the modal age at which U.S. young adults graduate high school and either begin to work full-time, attend college, or both (Payne, 2012). According to a life course perspective, age 18 is also considered to be the age at which emerging adulthood begins (Arnett, 2007). Age 30 is determined to be the endpoint for our measures of coresidential histories because by age 30, most young adults who attend college have either graduated or dropped out as well as made the first transition out of or back into their parents' household, if they are going to leave at all (Parker 2012). Next, we theorize that these three intergenerational coresidential patterns serve as a key dimension of parent-child tie for midlife mothers as these patterns distinctly structure maternal-child bonds with important implications for body weight.

At midlife, these three intergenerational coresidential patterns theoretically influence mother's body weight in different ways due to the different contexts that each coresidential pattern brings. For example, body weight is very sensitive to perceived stress and psychological distress (Torres and Nowson, 2007), and women's body weight is especially responsive to family-related strains (Block et al., 2009). Intergenerational coresidential patterns are associated with distinct life events and transitions of young adults, which entail different stressors that further influence mother's body weight. For example, current research shows that mothers' mental wellbeing decreases when adult children encounter problems or negative life events (e.g., divorce, unemployment) via a process of intergenerational stress proliferation (Milkie et al. 2008; Greenfield and Marks 2006; Kalmijn and De Graaf 2012). Below we theorize how the three coresidential patterns may be differentially associated with mother's body weight in different ways via the contextual changes and stress processes associated with each coresidential pattern.

The gone-for-good.—Despite the increasing delay in home departure (Furstenberg, Rumbaut, and Settersten 2005; Newman 2012), almost all young adults agree that the ideal time to leave parental household is by age 25 (Settersten 1998). In a report that uses data from NLSY97—Millennial cohort of emerging adults in the U.S., 47% of men and 46% of women leave parental household after 18 and do not return by age 24 (Payne 2011). The majority of these young adults move in with a spouse or cohabiting partner, with the remainder either live alone or enter semi-autonomous living such as dormitories and military barracks, or move in with other family members (Goldscheider and Goldscheider 1999). Many young adults also relocate geographically away from their parents because the educational or employment opportunities are in another location, and this transition is viewed as a positive development from a mother's perspective (Goldscheider and Goldscheider 1999). In general, independently-living young adults are more likely to be employed and earn more than those who live with parents (Payne and Copp 2013).

The gone-for-good coresidential pattern may be most favorable for midlife mothers' body weight. Gone-for-good children take the desired and expected pathway of departing from the home and not returning within a normative timeline, and thus mothers may feel a reduction in stress due to a sense that they have appropriately prepared their child for a successful launch into adulthood. Additionally, the gone-for-good children may decrease mother's chances for body weight increase relative to other groups because of the reduction of daily stressors that come with intergenerational coresidence with adult children—stressors that are important biosocial mechanisms that influence body weight (Pearlin et al. 2005). For example, the transition to an empty nest is associated with reduced daily hassles (Dennerstein et al. 2002), reduced parent-child conflicts (Ward and Spitze 2007), and decreased work-family conflicts (Erickson, Martinengo, and Hill 2010), all of which are important stressors that can link with body weight. Additionally, parents tend to have more time and resources for self-care and leisure after adult children transition to independence (Henderson et al. 1996), and parents may not be influenced by unhealthy eating and exercise habits by their non-coresidential children. A stress perspective further suggests that in the absence of their child, mothers to a gone-for-good young adult child may be better able to attend to their own wellbeing such as engaging in regular physical activity and healthy

eating. In other words, a gone-for-good coresidential pattern means fewest stressors and more resources to promote healthy behaviors; as a result, mothers of the gone-for-good may have the most moderate midlife body weight trajectory among all three groups.

The boomerangers.—In this study, boomerang children are defined as those who have left the maternal home after 18 but return before the age of 30. According to a nationwide survey of 2,048 adults conducted in 2011, 40 % of 18-to-24-year-old boomerang after the initial departure (Parker 2012) — this does not include boomeranging during college enrollment, but does include children who return home after dropping out of or completing college. Postponement in young adult role transitions (e.g., transition to marriage and home ownership) and deficiency in young adult's economic resources—such as income loss, a lack of employment opportunities, or the greater cost of sustaining independent living—are associated with higher likelihood of returning home (Houle and Warner 2017; Sassler et al. 2008). Compared to mothers of the gone-for-good, mothers of the boomerangers likely encounter more stressors that may impact body weight. For example, boomerang mothers may feel stress and distress because they feel they did not adequately prepare their child to live independently. Moreover, boomerangers' mothers may experience additional stressors and health habit adjustments as children's transition back to the nest, such as the negotiation of housework division and financial responsibilities (Sassler et al. 2008). These additional stressors and time constraints accompanied by children's return may in turn increase mother's unhealthy behaviors such as irregular food intake and disrupted routines in physical activity, increasing body weight. Children may also bring back to the home unhealthy eating and exercise habits, which may in turn influence maternal body weight. Consequently, midlife mothers of the boomerangers may have higher body weight than mothers of the gone-for-good.

The never-left.—Recent research on intergenerational continuous coresidence into children's young adulthood highlights a third less common, but increasingly important subgroup of adult children: those that have not left the parental household prior to age 30. For instance, using a sample of 1,113 older mothers aged 58-to-97, Wiemers and colleagues (2017) find that 6.85% of women had never-left adult children in their household at the time of the survey. Although there is little known about this group of young adults and their parents, young adults who are male, unmarried, unemployed, economically needy, and those who are working on their post-secondary education are more likely to be never- or later-leavers (Burn and Szoek 2016; Goldscheider and Goldscheider 1999; Sassler et al. 2008). Because this is a particularly non-normative status, mothers may feel the stigma and strain of housing a never-left adult child, increasing stress and in turn body weight. Additionally, the conditions of continued coresidence with adult children who never leave may shape body weight trajectories. Research has shown that mothers tend to prioritize children's wellbeing and engage in unhealthy behaviors more (e.g., eating less healthy food and working out less) when children need more support (Reczek et al., 2014). Compared to mothers of the gone-for-good, mothers of the never-left are exposed to the daily stressors for a longer duration of time and likely engage in more unhealthy behaviors, which can take a toll on their body weight.

Taken together, due to differential levels of stress proliferation and varying motherhood contexts across coresidential patterns, we hypothesize that:

H1: Mothers of the gone-for-good will experience the lowest BMI score at baseline and the most moderate increase in their BMI trajectory among the three groups.

Furthermore, while mothers of the boomerangers adjust to additional stressors and constraints associated with children's transitioning back home, mothers of the never-left may need to manage an extended situation wherein children lack progress in transition to adulthood. As a result, mothers of the boomerangers and mothers of the never-left likely have distinct body weight trajectories reacting to different stressors. Additionally, although both of these non-normative coresidential patterns may be interpreted as mother's setbacks in launching adult children and subsequently increase maternal stress and time constraints, young adults' return rather than continual coresidence may present itself as a more acute stressor, inducing more dramatic maternal weight gain across midlife. We thus hypothesize that:

H2: Mothers of the boomerangers and mothers of the never-left will have similar baseline BMI scores but the former group may gain more weight across midlife than the latter group.

DATA AND METHODS

Description of the Data

This study uses data from two prospective cohort studies—the National Longitudinal Survey of Youth 1979 and the corresponding 1979 Young Adult Survey—to investigate the impact of intergenerational coresidential biographies on mother's BMI across midlife. In 1979, 12,686 NLSY79 respondents, aged 14–22, were randomly selected and followed over time. Participants were interviewed annually between 1979 and 1993 and biennially since 1994. The most recent wave of data available is from 2014. In 1986, data collection efforts began on all children born to NLSY79 mothers to gather information on a wide range of social, economic, and psychological characteristics. The NLSY79 children, once turned 14, participate in NLSY79-YA survey conducted biannually until 2014. In addition to the initial intention of studying the baby boomers' labor market experiences as they transitioned from adolescence into adulthood, the NLSY79 are among the best datasets with which to examine how the health of both mothers and children change over the life course. For the current study, we combined data from female members of the original NLSY79 cohort with information from their young adult children (NLSY79-YA) to examine how patterns of coresidence shape mother's body weight during midlife.

Measures

Dependent variable—The outcome measure is body mass index (BMI), which is calculated by dividing self-reported maternal weight (in kilograms) by height (in meters) squared. Self-reported weight and height have established validity in nationally representative surveys, largely due to the ease and accuracy with which respondents from a wide variety of backgrounds can recall them (Gorber et al. 2007). We modeled BMI as a continuous variable, which allowed us to examine the trajectory and degrees of change in

BMI as it varies incrementally over time (Umberson et al. 2011). Because change in BMI for the middle-age women is primarily driven by change in weight, we thus use “body weight” or “weight” to refer to the dependent variable in subsequent sections.

Independent variable—To construct our primary independent variable, coresidence trajectories, we relied on information from NLSY79-YA respondents who were between the ages of 18 and 30 years. In each survey year, young adult respondents were asked who they reside with, and were given the option to signify whether they were living in the household of mother, with both parents, in their own dwelling unit, in dormitory, fraternity or sorority, or in other living arrangements. To minimize coding error in the field, NLSY79 staff constructed a residence type variable from a series of residential questions and recommended it to researchers interested in residential patterns. We deployed answers of this residence type variable from young adults since they first entered the survey of NLSY-YA starting at age 14. Young adults who reported to have lived in a household with their mother or both parents between age 14 and 18 were considered to be children that have grown up in a maternal household and are thus included in the sample. As NLSY79-YA survey is to collect information from children born to all the NLSY79 women, 99.9% of the young adults in the data grew up in a maternal household. Young adults who did not grow up in a maternal household were deleted from the sample. Young adults’ first exit was captured when they reported the first episode of residence in a household without their mother since age 18¹. A return to the maternal household after the first exit was considered a boomerang event.

Based upon this year-specific measure, we categorized NLSY79 young adults into three categories to describe their coresidential histories during emerging adulthood. Those who left their maternal home once after age 18 and never returned before age 30 were classified as “gone-for-good.” NLSY79-YA respondents who exited from their maternal home after age 18 and transitioned back by age 30, either once or multiple times, were placed in the “boomerang” category. As for college-attending young adults who reported to be “living in dormitory, fraternity, or sorority” and those that were “living in own dwelling unit” in the original residence type variable², we followed prior research (Parker 2012; South and Lei 2015) and considered them living outside of maternal household. These young adults were thus placed in either the “gone-for-good” or the “boomerang” category depending on their coresidential history. YA children who consistently reported living in their mother’s household between the ages of 18 and 30 were designated as part of the “never-left” group.

Although most of the never-left adult children might ultimately become gone-for-good or boomerangers as they aged, we argue that it is important to keep these three categories separate for a number of reasons. First, the never-left group was designed to capture young adults’ continued or prolonged residence in the maternal household when their mothers were at midlife. Following the life course perspective that takes the timing of events seriously for

¹A close scrutiny of young adult’s residential trajectory shows that about 30% of the young adults in the sample exited maternal household prior to age 18. Sensitivity analysis that includes an early-exit variable shows qualitative similar results as those presented in the text.

²1% of young adults in the sample reported to be “living in dormitory, fraternity, or sorority” and 9% reported to be “living in one’s own dwelling” while enrolled in regular school.

the focal person, our study examines one particular life event—mother-child coresidential pattern during mother's midlife and how this relates to mother's wellbeing for one cohort of women. One of the main coresidence patterns is a never-left pattern. Second, the experience of housing an adult child who has never exited for a midlife mother may come with unique psychosocial stressors and, thus, result in worsening health for the mother, including but not limited to unhealthy weight gain and an increased risk of obesity. In subsequent sensitivity analyses (available upon request), we divided the “boomerang” category into two additional groups—those who remained within their mother's residence upon returning home and those who, returned to the maternal home after leaving but at some point in the future left their maternal home for a second time. Findings remained remarkably consistent across models.

Control variables—We accounted for a number of potential confounders in multivariate regression analyses that could be associated with both intergenerational coresidence patterns and mother's BMI. We included sociodemographic and SES-related control variables for NLSY79 mothers. They are as follows: race/ethnicity (Non-Hispanic White, Non-Hispanic Black, Hispanic), marital status (never married, married or cohabiting, other), region of residence (northeast, north-central, south, and west, to address the influences of housing prices on coresidential patterns), highest grade completed, family income (adjusted for inflation and reported in 2014 dollars, and transformed to address positive skewness), number of persons in the family which was top coded at six plus, employment status, and health insurance coverage (private, public, self-pay). In order to account for additional stressors that are not linked directly to the stressors of coresidence, we included a set of control variables that represented young adult's major life events and transitions. These variables include sex (male/female), marital status (never married, married, cohabiting, other), parental status (yes/no), educational attainment (below high school, high school, college or above), and employment status (neither in school or working, in school, working, in school and at work). Most of these measures are time-varying; the exceptions are mother's race/ethnicity, education, and young adult's gender. Therefore, any findings we show are more likely to be related to coresidence dynamics rather than external forces that sort individuals into distinct coresidence patterns.

Analytical Approach—We deployed multilevel regression models (i.e., growth curve models) to examine how young adult's coresidential biographies influence midlife mother's BMI. Multilevel analysis is appropriate for this study because of its ability to capture how BMI fluctuates *within* as well as *across* respondents over time. As a result, multilevel models are well positioned to distinguish between-individual variability from within-individual variability. To this end, we estimated a series of multilevel regression models predicting how BMI among NLSY79 mothers fluctuates across midlife based upon the following equation:

$$y_{ij} = \beta_1 + \beta_2 \delta_j + \beta_3 t_{ij} + \beta_4 \delta_j t_{ij} + \beta_5 x_{5ij} \dots + \beta_n x_{nij} + \varsigma_{1j} + \varsigma_{2j} t_{ij} + \epsilon_{ij}$$

where y_{ij} represents BMI of mother j at time i , β_1 is the population-averaged intercept (or the initial BMI score across all mothers), δ_j captures mother-child coresidential pattern, t_{ij} is the age of mother j at time i , $x_5 - x_n$ stands for a series of additional time varying or time invariant covariates, ς_{1j} is the random intercept, ς_{2j} is the random slope, and ϵ_{ij}

refers to the individual- and time-specific error term. Note that the time unit for the analysis is mother's age. Robust standard errors were calculated using the Huber/White correction estimate and clustered at the highest level of aggregation (the original NLSY79 family). Regression models were estimated using the mixed command in Stata 15.0.

We used multiple imputation methods with chained equations to deal with issues of missing data. These procedures use a diverse set of predictors to estimate multiple sets of responses for each missing observation. Imputed values include a random component based on draws from the posterior predictive distribution of the missing data under a posited Bayesian model which, under the missing-at-random assumption, provide unbiased estimates of variance (Allison, 2001). According to the suggestion in extant literature that three to five datasets are appropriate for models with up to 20% missing, we produced five distinct datasets (van Buuren, 2012; Royston, 2005). Guided by previous research (Von Hippel 2007), we first ran the imputation model including observations with missing values on BMI, but then deleted respondents who had missing BMI from subsequent descriptive and multivariate analyses. The proportion of missingness for all variables fell below the suggested cut-point of 5% (Schafer 1999) except for family income, for which 13% of observations lacked valid responses. To address concerns related to the high proportion as well as the nonrandom distribution of missing data on this variable, we performed sensitivity analysis excluding family income from all imputations and subsequent regression analyses. Results were consistent across model specifications.

The NLSY79 contains information on 3,301 mothers who had at least one child 18 years or older by 2014, the last year for which data is available. All the interviewed young adults, some of whom were siblings with the same mother (discussed below), had valid information regarding their living arrangements. We excluded 10 NLSY79 mothers whose young adult children were either institutionalized or had never lived with mother during childhood. 36 NLSY79 mothers were dropped from the analytic sample due to missing values on BMI. Furthermore, 214 of values for weight and/or height from 82 NLSY79 mothers were extreme, defined here as greater than 3 standard deviations from the mean across all NLSY79 mothers in a given year and were likely attributable to respondent error or interviewer miscoding. To address this issue, we replaced these extreme values with person-specific mean BMIs. We conducted a series of sensitivity checks and found that this strategy to deal with the outliers did not influence our results. All told, these inclusion criteria generated an analytic sample of 3,255 mothers and 7,197 young adult children for whom we have prospective data from 1994 through 2014. Thus, the unit of analysis in the current study is person-years ($n=27,903$).

The NLSY79 young adult survey contains information on multiple children born to the same mother. In order to estimate the association between mother-young adult coresidential patterns and fluctuation in maternal BMI across midlife, we chose to include data on all siblings. An alternative would be to randomly select one child per mother, include only oldest children, or include only youngest children. Retaining all siblings in the analytic sample does not require that we fully understand all of the underlying complex family dynamics that could give rise to differences in the young adult coresidential and maternal health relationship. In some families, the experiences of the oldest child might more strongly

influence a mother's risk of high body weight, while in others it could be the experiences of the youngest child. Randomly selecting a focal child for each family would thus introduce other sources of unknown bias if the selected child did not correspond to the one that most forcefully impacted maternal health. Further, it is more likely that it is some combination of mother-child coresidence patterns with all siblings within a given family that has the biggest impact on mother's body weight changes. By including all children born to each NLSY79 mother, we are able to maximize the amount of information regarding young adult transitions for each NLSY79 respondent. This approach mirrors scholarship that has examined the intergenerational transmission of health outcomes and behaviors (Classen 2010; Weden and Miles 2012) and research that has studied the effects of parenting experiences on maternal as well as children's health (Colen and Ramey 2014; Zilko et al. 2010). To determine if our decision to include multiple YA children for each NLSY79 mother resulted in biased findings, we conducted sensitivity analyses in which we randomly selected one YA child from each NLSY79 family. These results, which are presented in Appendix 1, closely resemble those generated by regression models inclusive of all siblings and suggest that our results are robust to this type of model specification.

RESULTS

Descriptive Findings

Descriptive results for the full sample and the sample stratified by parent-child coresidential biographies are presented in Table 1. Significance tests ($p < 0.05$) were conducted to assess differences across intergenerational coresidential patterns. The majority of children in the full sample (61%) adhered to coresidential trajectories that could be classified as gone-for-good (GFG), while 22% and 17% fell into the boomerang (BMG) or never-left (NL) categories, respectively. Mean BMI for the full sample of NLSY79 mothers was 29.10 kg/ m². Comparing across the three coresidential groups, we find mothers of the BMG and the NL to have similar BMI scores of 29.65 kg/ m² and 29.51 kg/ m², respectively, which were significantly higher than BMI scores among mothers of the GFG (28.79 kg/m²).

Mothers of young adults with distinct coresidential biographies appear to differ on several key characteristics. Compared to mothers of the GFG young adults (YAs), boomerangers' mothers were slightly younger, less likely to be non-Hispanic White, and less likely to be married or cohabiting. Mothers of the NL young adults were also more likely to be African American and Hispanic, less likely to be previously married, and more likely to live in the Northeast than mothers of the GFG category. In comparison to mothers of the GFG, boomerangers' mothers had lower SES (e.g., fewer years of completed education, lower family income, and higher rate of public insurance), whereas mothers of the NL had similar or even higher SES. YAs also differed from one another by intergenerational coresidence. Compared to the GFG YAs, a smaller proportion of boomerangers and the never-left were married or had children and completed fewer years of schooling.

Multilevel Regression Results

Results from multilevel regression analyses that predict BMI trajectories among NLSY79 mothers are shown in Table 2. We centered mother's age to generate coefficients that

represent mothers' mean BMI score at 40 years, an age that is typically considered to be the beginning of midlife (Lachman et al. 2015). Models 1A and 1B control for an extensive set of maternal sociodemographic covariates, while Models 2A and 2B adjust for additional key child characteristics that could potentially confound the association between YA coresidential trajectories and maternal BMI. Models 1A and 2A use mothers with GFG children as the reference group, while Models 1B and 2B use mothers with NL children as the comparison group.

According to Model 1A, mothers of the NL and BMG were, on average, 0.620 kg/m^2 ($p < 0.05$) and 0.467 kg/m^2 ($p < 0.05$) heavier than mothers of GFG, respectively, at age 40. This translates to a weight gain of 4 pounds and 3 pounds, respectively, for an adult woman with a height of 5 feet 4 inches and an original weight of 173 pounds, the average height and weight of American women aged 40–49 between 2011 and 2014 (CDC, 2014). Results in Model 1B reveal that the baseline weights between the NL and BMG mothers were not significantly different ($b = -0.153$, $p > 0.05$).

Model 1A also reveals how average BMI scores for all three coresidential groups fluctuated across midlife. BMIs for GFG mothers increased at a rate of 0.142 kg/m^2 per year ($b = 0.142$, $p < 0.001$). Results for interaction terms (coresidential group*age) reveal significant differences in the rate of change over time between GFG and NL mothers, but not GFG and BMG mothers. NL mothers could only expect their BMIs to increase by 0.068 per year ($0.142 - 0.074$). In other words, a GFG mother with a height of 5 feet 4 inches and an original weight of 173 pounds would gain an average of 8 pounds over 10 years, whereas her counterpart with a NL child would gain about 4 pounds in the same period of time. The small magnitude of the coefficient for the boomerang*age interaction suggests that BMG mothers gained weight at a similar rate across midlife as GFG mothers. Results from Model 1B show that BMG mothers' BMI scores also increased more than NL mothers across midlife ($b = 0.073$, $p < 0.001$).

We controlled for YA's as well as maternal sociodemographic characteristics in Models 2A and 2B, Table 2. Compared to results in Model 1A, Model 2A shows that the coefficient of the difference in BMI at age 40 between NL and GFG mothers increased from 0.620 to 0.884, suggesting that differences in YA children's sociodemographic characteristics suppressed NL and GFG mothers' BMI difference at age 40. However, the difference in the rate of change in BMI between these two groups decreased slightly from -0.074 to -0.066 kg/m^2 per year ($p < 0.001$) once we accounted for additional child controls. In other words, a GFG mother with a height of 5 feet 4 inches and an original weight of 173 pounds would gain an average of 4 pounds over 10 years, whereas the weight of her counterpart with a NL child would remain stable in the same period of time. Subsequent analyses (available upon request) reveal that BMI scores of GFG and NL mothers converged during their early 50s.

Regarding comparisons between GFG and BMG mothers, our results remained remarkably consistent across Models 1A and 2A, suggesting that child characteristics might explain more of the BMI difference between NL and GFG mothers compared to that between BMG and GFG mothers. Model 2A suggests that accounting for child characteristics, BMG mothers had a higher BMI score than GFG mothers at age 40 but these two groups

experienced similar rates of weight gain across midlife. Results from Model 2B suggest that compared to NL mothers, BMG mothers had similar BMI scores at age 40 ($b = -0.423$, $p > 0.05$) but they experienced more weight gain over time ($b = 0.061$, $p < 0.01$).

Predicted values from Model 2A were plotted in Figure 1. NL mothers had higher BMI scores than GFG mothers at the beginning of midlife (age 40). Due to differences in weight gain over time across coresidential groups, the discrepancy in BMI between GFG and NL mothers gradually decreased and ultimately converged in their early 50s. BMG mothers, on the other hand, had significantly higher BMIs at age 40 than the GFG mothers but experienced similar weight gain over time. NL and BMG mothers had similar body weights at age 40, but BMG mothers gained significantly more weight across midlife than NL mothers.

Sensitivity Analyses

We ran multiple sensitivity analyses to test the robustness of our findings. First, we considered whether our results were driven by maternal and/or child health status. YAs with mothers in poor health might be less willing or able to leave maternal home as other YAs, falling in the NL or BMG category, if they were needed to help care for a sick or aging mother. However, previous research has shown that mother-child coresidential patterning is more dependent on the needs of YA children than their mothers at this particular life course stage (Fingerman et al. 2012b). To this end, we ran additional sensitivity analysis that included measures of mothers' and YAs' self-rated health and found our results to be qualitatively similar (Appendix 2). Second, we assessed the extent to which maternal race/ethnicity, education, family income, and employment status predicts changes in BMI scores across midlife and whether this alters our findings about intergenerational coresidence and maternal BMI (Appendix 3). According to these analyses, the maternal race/ethnicity and family income were predictive of mother's BMI changes across midlife, yet the findings about international coresidence and mother's BMI remained similar to those presented in Table 2. Third, to determine if the association between children's coresidential patterns and mothers' BMI was driven by younger NLSY79 YAs who had not yet had time to fully establish a pattern of home leaving, we conducted sensitivity analyses that included only mothers whose YA children had at least surpassed age 22 years by the first wave of data collection (Appendix 4). These results are comparable to those presented in Table 2.

DISCUSSION

The rise of overweight and obese statuses in the general U.S. population has drawn significant research attention, yet the underlying social determinants of body weight at midlife remain under-addressed. Research is especially needed on the body weight of midlife women because women tend to be obese for a more prolonged period of time than men, and midlife is the life course stage with the highest obesity rate. Midlife motherhood is likely a key determinant of body weight given the increasingly diverse set of young adult children who take multiple pathways to independence, and the present study is the first to examine how mother-adult child coresidential patterns are associated with mother's body weight trajectories at midlife. Results from multilevel models show that intergenerational

coresidential patterns are associated with both baseline BMI differences as well as differing BMI trajectories among midlife mothers. Below, we discuss our findings and highlight our main contributions and implications for future research.

First, our findings suggest that intergenerational coresidential biographies matter for midlife mothers' body weight both at baseline and over time, even when all covariates including adult children's life events are included. In support of hypothesis 1, findings show that mothers with gone-for-good children experienced the lowest baseline BMI; at 40, having a child who has left the home and not returned is associated with lower BMI than midlife mothers whose children boomeranged back into the home or whose adult children had never left the home. But mothers of the boomerangers continued to have higher body weight than mothers to the gone-for-good until late 50s. This suggests that mothers of the boomerangers experience more disadvantage relative to our predictors of BMI. Upon the return to maternal household, boomerang children may increase a mother's feelings of maternal inadequacy, which may relate to maternal body weight change. Additionally, this transition may (re)introduce daily stressors, including routine hassles, parent-child conflicts, and work-family strains to their mothers' lives (Dennerstein et al. 2002; Ward & Spitze, 2007; Erickson et al., 2010), which in turn may increase maternal body weight. Alternatively, as the rate of change in body weight between early 40s and late 50s did not vary between mothers to the gone-for-good and mothers to boomerangers, it is possible that the driving force of such difference is a pre-existing selection factor. For example, it may be that other sustained stressors or SES characteristics unable to be included in the study underlie these processes, all of which warrants future research.

Second, and inconsistent with Hypothesis 1, we found that the body weight of mothers of the never-left and the gone-for good converged in mothers' early fifties. Such convergence may reflect the fact that a constant coresidential status—regardless of what that status is—may reduce the negative effects of any coresidential pattern. For example, while mothers may at first be stressed by an adult child failing to leave the nest, mothers may get used to the presence of the never-left and over time experience diminished effects of stress on BMI. In fact, current work has shown that the young adults who stably reside with parents report similar mental wellbeing as those who remain stably independent (Caputo, 2018), which suggests that the never-left may not introduce additional stressors to their mothers by being mentally distressed themselves. Moreover, coresidential stigma perceived by never-left's mothers has lessened, as extended coresidence with adult children has become increasingly common for the past two decades (Fry, 2016). Similarly, current research has found that after the Great Recession that occurred in the late 2000s, coresidence with adult children is no longer associated with lower marital quality among parents as it once was (Davis et al., 2016). As a result, mothers to the never-left young adults, many of whom transitioned to adulthood during the post-recession years and were attending school to increase their employability at the time, may develop more understanding of their children, experience less strain over time, and thus gain less weight over time than mothers of the gone-for-good.

Third, we found support for Hypothesis 2, which theorized the mothers of the never-left and the boomerangers would have similar body weight at early 40, but that the mothers of the boomerangers would gain more weight by their mid 50s. This once again suggests that

boomerangers' mothers may experience the worse effects on their body weight. One major difference between mothers of the never-left and mothers of the boomerangers is that the former group had a continued intergenerational coresidence with the focal child whereas the latter did not. Previous literature establishes that instability in family life increases stress and decreases wellbeing (Cooper et al., 2009). A young adult's return may shift the diet and exercise habits of mothers so as to accommodate young adult's schedule and habits; this may induce weight gain that would otherwise not take place if these coresidential changes did not occur.

Limitations

Although the current study contributes to our understanding of the health effects of intergenerational coresidence patterns, findings should be interpreted in light of certain limitations. First, while all NLSY79 mothers in our analytic sample have entered midlife, reflecting the study's primary aim of examining predictors of women's health and wellbeing during this critical life course period, not all of their YA children have reached age 30 by the latest available wave (2014). This is primarily a result of heterogeneity in fertility timing that led a small proportion of NLSY79 mothers to postponed childbearing. Thus, for a small subset of NLSY79 YAs, we were only able to capture coresidential trajectories for some but not all of the time period between 18 and 30 years of age³. We recognized this issue and conducted sensitivity analysis (Appendix 4) that included only mothers with YA children aged between 22 and 30. We found the results comparable to those presented in Table 2. Yet, extending mother's age up until later life so as to include a more detailed intergenerational coresidence trajectory for most mother-YA children pairs (if data permits) can invite other conundrums, one of which is that at later life, intergeneration coresidence is shifting to meet the needs of aging mothers' instead of the children's. This requires additional theoretical frameworks and is beyond the scope of our study, but warrants attention from future research.

Second, this study cannot fully control for selection into the three different coresidential groups. As is evident from our descriptive results, mothers of boomerang YAs were more likely than gone-for-good YAs to be African American, less educated, and had lower family incomes, while mothers of never-left YAs reported more years of completed schooling and higher family incomes. Although we did control for these factors, along with other, key maternal and child sociodemographic characteristics that could potentially confound the association between intergenerational coresidence trajectories and maternal BMI in multivariate models, standard regression techniques – even those as rigorous as the ones employed in the current study — are ill equipped to completely account for selection into different patterns of home leaving for YA children. Unfortunately, despite our longitudinal study design, fully addressing issues of selection is beyond the scope of the current paper since doing so would require a markedly different analytic approach (e.g. one that uses a natural experiment to approximate random allocation into the three types of YA coresidential patterns). Future research should assess how selection plays a role in the relationship between intergenerational coresidence and midlife mothers' body weight trajectory.

³More than 75% of young adults in the sample had valid information up until age 25 or beyond.

Third, our measure of YA coresidential transitions does not perfectly capture moves in and out of the maternal household due to data collection taking place every other year as opposed to every year; thus, we might not capture short-term (within two years) fluctuations in residential status. However, our study follows the best practice to capture coresidential patterns with the contemporary survey data, that is—using individuals' self-report of residence rather than household roster (Houle & Warner 2017). We call for future research to address this measurement issue with more detailed data on transitions of intergenerational coresidence.

Lastly, we were only able to assess the impact of intergenerational coresidential trajectories on mother's BMI, not father's BMI. This was largely a result of how the initial NLSY79-YA sample was constructed. All children born to female, but not male, NLSY79 respondents were included in the young adult cohort and followed over time. Thus, the extent to which gone-for-good, boomerang, and never-left children disproportionately affect their midlife father's body weight, and subsequent risk of obesity, remains an important empirical question that should be tackled by future research.

Conclusion

Despite the limitations, this study expands prior research on the links between the motherhood contexts of midlife and women's well-being. Taken together, these findings extend prior literature, most of which finds that the normative behaviors of adult children are positively associated with parents' *psychological* wellbeing (e.g., Fingerman et al. 2011; Pudrovska 2009). This study further reveals that the normative leaving-home behavior of young adult children also has substantial impact on mothers' *physical* health. Of note, we find that intergenerational coresidential patterns have sustained physical health effects for mothers across midlife. This is of particular interest because midlife is a life course period during which the risk of cardiovascular disease among women rapidly increased due to a plethora of factors including rapid weight gain (Lee et al. 2010; Choi et al. 2012), hormonal fluctuations secondary to the onset of menopause (Matthews et al. 2009), and worsening health behaviors especially those associated with physical activity (Shaw et al. 2010). This study contributes to the existing literature by emphasizing that social exposures are just as important to consider as health related exposures when trying to fully understand rising rates of obesity among midlife women. This study provides one new puzzle piece to the effects of the changing demographics of family life for midlife mothers — whose children take increasingly diverse paths to independence — on their midlife health.

Appendix

Appendix 1.

Results from Multilevel Regression Models with Random Coefficients Predicting Mom's BMI by Intergenerational Coresidential Patterns, 1994–2014

	Model 1		Model 2	
	b	SE	b	SE
Intercept	27.222***	1.128	28.609***	1.138

	Model 1		Model 2	
	b	SE	b	SE
<i>Children's Residential Pattern since Age 18</i>				
the Gone-for-good	ref		-1.387***	0.331
the Never-left	1.387***	0.331	ref	
Boomerangers	0.696*	0.317	-0.691 ⁺	0.401
<i>Age (centered at 40)</i>	0.082***	0.023	0.008	0.029
<i>Children's ResidentialPattern*age</i>				
the Gone-for-good *age	ref		0.074**	0.027
the Never-left*age	-0.074**	0.027	ref	
Boomerangers*age	-0.016	0.020	0.058 ⁺	0.030
Mother's Characteristics				
<i>Race/Ethnicity (ref: Non-Hispanic White)</i>				
Non-Hispanic Black	3.087***	0.258	3.087***	0.258
Hispanic	1.393***	0.282	1.393***	0.282
<i>Marital Status (ref: Married or Cohabiting)</i>				
Never Married	0.258	0.275	0.258	0.275
Previously married (Separated, Divorced, Widowed)	-0.280*	0.120	-0.280*	0.120
<i>Highest Grade Completed</i>	-0.092*	0.045	-0.092*	0.045
<i>Ln Family income (2014 \$)</i>	-0.098	0.071	-0.098	0.071
<i>Family size</i>	0.047	0.030	0.047	0.030
<i>Employed</i>	-0.034	0.104	-0.034	0.104
<i>Health Insurance (ref: Private)</i>				
Public	0.189	0.124	0.189	0.124
Self-pay	-0.113	0.092	-0.113	0.092
<i>Region of Residence (ref: Northeast)</i>				
North Central	0.053	0.297	0.053	0.297
South	0.305	0.249	0.305	0.249
West	0.166	0.300	0.166	0.300
Children's Characteristics				
Age	0.056*	0.023	0.056*	0.023
<i>Sex (ref: Male)</i>				
Female	0.429*	0.208	0.429*	0.208
<i>Marital Status (ref: Never Married)</i>				
Married or cohabiting	0.040	0.075	0.040	0.075
Previously married	-0.009	0.213	-0.009	0.213
<i>Parental status (ref: No coresidential child)</i>				
Has a coresidential child	0.038	0.093	0.038	0.093
<i>Educational Attainment (ref: Below high school)</i>				
High School	0.153	0.111	0.153	0.111
College or above	0.078	0.171	0.078	0.171
<i>Economic Status (ref: Neither in school/working)</i>				
In school	-0.273	0.276	-0.273	0.276

	Model 1		Model 2	
	b	SE	b	SE
Working	−0.112	0.262	−0.112	0.262
In school and working	−0.169	0.265	−0.169	0.265
<i>Random effects</i>				
Level 1 residual	4.274 ***		4.274 ***	
Level 2 age	0.076 ***		0.076 ***	
Level 2 intercept	33.496 ***		33.496 ***	
N (Person-Years)	12,192		12,192	
N (NLSY79-Young adult child-mother pairs)	3,253		3,253	

⁺ p<.10

* p<.05

** p<.01

*** p<.001

Source: NLSY79 and 79 Young Adults Survey (1994–2014).

Appendix 2.

Results from Multilevel Regression Models with Random Coefficients Predicting Mom's BMI by Intergenerational Coresidential Patterns, 1994–2014

	Model 1		Model 2	
	b	SE	b	SE
Intercept	27.710 ***	1.014	28.480 ***	1.023
<i>Children's Residential Pattern since Age 18</i>				
the Gone-for-good	ref		−0.770 **	0.252
the Never-left	0.770 **	0.252	ref	
Boomerangers	0.397 ⁺	0.216	−0.373	0.283
Age (centered at 40)	0.084 ***	0.018	0.019	0.023
<i>Children's ResidentialPattern*age</i>				
the Gone-for-good *age	ref		0.065 ***	0.020
the Never-left*age	−0.065 ***	0.020	ref	
Boomerangers*age	−0.004	0.014	0.061 **	0.021
Mother's Characteristics				
<i>Race/Ethnicity (ref: Non-Hispanic White)</i>				
Non-Hispanic Black	3.066 ***	0.270	3.066 ***	0.270
Hispanic	1.474 ***	0.304	1.474 ***	0.304
<i>Marital Status (ref: Married or Cohabiting)</i>				
Never Married	−0.117	0.265	−0.117	0.265
Previously married (Separated, Divorced, Widowed)	−0.374 **	0.115	−0.374 **	0.115
Highest Grade Completed	0.014	0.050	0.014	0.050
Ln Family income (2014 \$)	−0.064	0.057	−0.064	0.057
Family size	0.084 **	0.031	0.084 **	0.031
Employed	−0.073	0.094	−0.073	0.094
<i>Health Insurance (ref: Private)</i>				

	Model 1		Model 2	
	b	SE	b	SE
Public	0.177	0.116	0.177	0.116
Self-pay	-0.147 ⁺	0.081	-0.147 ⁺	0.081
<i>Region of Residence (ref: Northeast)</i>				
North Central	-0.255	0.283	-0.255	0.283
South	0.082	0.243	0.082	0.243
West	-0.132	0.283	-0.132	0.283
<i>Self-rated health measured in the 40's health module</i>				
Poor or Fair (ref)				
Good	-1.118 ^{**}	0.367	-1.118 ^{**}	0.367
Very Good	-2.292 ^{***}	0.369	-2.292 ^{***}	0.369
Excellent	-3.839 ^{***}	0.379	-3.839 ^{***}	0.379
Children's Characteristics				
Age	0.066 ^{***}	0.018	0.066 ^{***}	0.018
<i>Sex (ref: Male)</i>				
Female	0.150	0.134	0.150	0.134
<i>Marital Status (ref: Never Married)</i>				
Married or cohabiting	-0.002	0.052	-0.002	0.052
Previously married	-0.028	0.133	-0.028	0.133
<i>Parental status (ref: No coresidential child)</i>				
Has a coresidential child	-0.000	0.066	-0.000	0.066
<i>Educational Attainment (ref: Below high school)</i>				
High School	0.004	0.075	0.004	0.075
College or above	-0.037	0.113	-0.037	0.113
<i>Economic Status (ref: Neither in school/working)</i>				
In school	-0.039	0.201	-0.039	0.201
Working	0.075	0.205	0.075	0.205
In school and working	0.093	0.202	0.093	0.202
<i>Self-rated health (ref: Poor or fair)</i>				
Good	-0.056	0.062	-0.056	0.062
Very Good	-0.036	0.066	-0.036	0.066
Excellent	-0.158 [*]	0.073	-0.158 [*]	0.073
<i>Random effects</i>				
Level 1 residual	4.271 ^{***}		4.271 ^{***}	
Level 2 age	0.075 ^{***}		0.075 ^{***}	
Level 2 intercept	32.096 ^{***}		32.096 ^{***}	
N (Person-Years)	27,903		27,903	
N (NLSY79-Young adult child-mother pairs)	7,197		7,197	

⁺ p<.10^{*} p<.05^{**} p<.01^{***} p<.001

Source: NLSY79 and 79 Young Adults Survey (1994–2014).

Appendix 3.

Results from Multilevel Regression Models with Random Coefficients Predicting Mom's BMI by Intergenerational Coresidential Patterns, 1994–2014

	Model 1		Model 2	
	b	SE	b	SE
Intercept	26.136***	1.185	26.881***	1.193
<i>Children's Residential Pattern since Age 18</i>				
the Gone-for-good	ref		−0.745**	0.251
the Never-left	0.745**	0.251	ref	
Boomerangers	0.404 ⁺	0.216	−0.341	0.283
Age (centered at 40)	0.329***	0.095	0.269**	0.096
<i>Children's ResidentialPattern*age</i>				
the Gone-for-good *age	ref		0.060**	0.019
the Never-left*age	−0.060**	0.019	ref	
Boomerangers*age	−0.006	0.014	0.054*	0.021
Mother's Characteristics				
<i>Race/Ethnicity (ref: Non-Hispanic White)</i>				
Non-Hispanic Black	2.966***	0.290	2.966***	0.290
Hispanic	1.860***	0.326	1.860***	0.326
Highest Grade Completed	0.029	0.055	0.029	0.055
Ln Family income (2014 \$)	0.073	0.083	0.073	0.083
Employed	−0.175	0.133	−0.175	0.133
<i>Race/Ethnicity*age (ref: Non-Hispanic White*age)</i>				
Non-Hispanic Black*age	0.014	0.017	0.014	0.017
Hispanic*age	−0.058**	0.019	−0.058**	0.019
Highest Grade Completed*age	−0.002	0.003	−0.002	0.003
Ln Family income (2014 \$)*age	−0.021*	0.009	−0.021*	0.009
Employed*age	0.017	0.015	0.017	0.015
<i>Marital Status (ref: Married or Cohabiting)</i>				
Never Married	−0.057	0.266	−0.057	0.266
Previously married (Separated, Divorced, Widowed)	−0.361**	0.115	−0.361**	0.115
Family size	0.082**	0.031	0.082**	0.031
<i>Health Insurance (ref: Private)</i>				
Public	0.173	0.115	0.173	0.115
Self-pay	−0.146 ⁺	0.081	−0.146 ⁺	0.081
<i>Region of Residence (ref: Northeast)</i>				
North Central	−0.252	0.282	−0.252	0.282
South	0.087	0.242	0.087	0.242
West	−0.127	0.282	−0.127	0.282
<i>Self-rated health measured in the 40's health module</i>				
Poor or Fair (ref)	−1.128**	0.368	−1.128**	0.368
Good	−2.298***	0.369	−2.298***	0.369
Very Good	−3.841***	0.379	−3.841***	0.379

	Model 1		Model 2	
	b	SE	b	SE
Excellent				
Children's Characteristics				
<i>Age</i>	0.065 ***	0.018	0.065 ***	0.018
<i>Sex (ref: Male)</i>				
Female	0.152	0.134	0.152	0.134
<i>Marital Status (ref: Never Married)</i>				
Married or cohabiting	0.005	0.052	0.005	0.052
Previously married	−0.027	0.133	−0.027	0.133
<i>Parental status (ref: No coresidential child)</i>				
Has a coresidential child	−0.006	0.066	−0.006	0.066
<i>Educational Attainment (ref: Below high school)</i>				
High School	−0.005	0.075	−0.005	0.075
College or above	−0.016	0.112	−0.016	0.112
<i>Economic Status (ref: Neither in school/working)</i>				
In school	−0.090	0.201	−0.090	0.201
Working	0.021	0.205	0.021	0.205
In school and working	0.033	0.202	0.033	0.202
<i>Self-rated health (ref: Poor or fair)</i>				
Good	−0.058	0.062	−0.058	0.062
Very Good	−0.036	0.066	−0.036	0.066
Excellent	−0.159 *	0.073	−0.159 *	0.073
<i>Random effects</i>				
Level 1 residual	4.270 ***		4.270 ***	
Level 2 age	0.075 ***		0.075 ***	
Level 2 intercept	32.079 ***		32.079 ***	
N (Person-Years)	27,903		27,903	
N (NLSY79-Young adult child-mother pairs)	7,197		7,197	

+ p<.10

* p<.05

** p<.01

*** p<.001

Source: NLSY79 and 79 Young Adults Survey (1994–2014).

Appendix 4.

Results from Multilevel Regression Models with Random Coefficients Predicting Mom's BMI by Intergenerational Coresidential Patterns, 1994–2014

	Model 1		Model 1B		Model 2		Model 2B	
	b	SE	b	SE	b	SE	b	SE
Intercept	29.213 ***	1.093	30.483 ***	1.178	29.717 ***	1.571	31.136 ***	1.629
<i>Children's Residential Pattern since Age 18</i>								

	Model 1		Model 1B		Model 2		Model 2B	
	b	SE	b	SE	b	SE	b	SE
the Gone-for-good	ref		-1.270**	0.448	ref		-1.419**	0.450
the Never-left	1.270**	0.448	ref		1.419**	0.450	ref	
Boomerangers	0.544 ⁺	0.285	-0.726	0.481	0.563*	0.287	-0.856 ⁺	0.482
Age (centered at 40)	0.124***	0.013	0.035	0.034	0.060**	0.022	-0.021	0.038
<i>Children's Residential Pattern *age</i>								
the Gone-for-good *age	ref		0.089*	0.036	ref		0.080*	0.036
the Never-left* age	-0.089*	0.036	ref		-0.080*	0.036	ref	
Boomerangers* age	-0.010	0.022	0.080*	0.038	-0.013	0.023	0.067 ⁺	0.038
Mother's Characteristics								
<i>Race/Ethnicity (ref: Non-Hispanic White)</i>								
Non-Hispanic Black	3.600***	0.304	3.600***	0.304	3.449***	0.305	3.449***	0.305
Hispanic	1.684***	0.353	1.684***	0.353	1.620***	0.350	1.620***	0.350
<i>Marital Status (ref: Married or Cohabiting)</i>								
Never Married	-0.094	0.355	-0.094	0.355	-0.120	0.354	-0.120	0.354
Previously married (Separated, Divorced, Widowed)	-0.339*	0.155	-0.339*	0.155	-0.348*	0.155	-0.348*	0.155
Highest Grade Completed	-0.104 ⁺	0.055	-0.104 ⁺	0.055	-0.062	0.056	-0.062	0.056
Ln Family income (2014 \$)	-0.127 ⁺	0.071	-0.127 ⁺	0.071	-0.118 ⁺	0.071	-0.118 ⁺	0.071
Family size	0.088*	0.038	0.088*	0.038	0.096*	0.039	0.096*	0.039
Employed	-0.001	0.124	-0.001	0.124	0.010	0.123	0.010	0.123
<i>Health Insurance (ref: Private)</i>								
Public	0.384**	0.139	0.384**	0.139	0.371**	0.139	0.371**	0.139
Self-pay	-0.166	0.101	-0.166	0.101	-0.166	0.101	-0.166	0.101
<i>Region of Residence (ref: Northeast)</i>								
North Central	-0.442	0.348	-0.442	0.348	-0.451	0.346	-0.451	0.346
South	0.027	0.314	0.027	0.314	-0.015	0.311	-0.015	0.311
West	-0.095	0.377	-0.095	0.377	-0.124	0.374	-0.124	0.374
Children's Characteristics								
Age					0.085***	0.023	0.085***	0.023
<i>Sex (ref: Male)</i>								
Female					0.169	0.158	0.169	0.158
<i>Marital Status (ref: Never Married)</i>								
Married or cohabiting					0.064	0.065	0.064	0.065
Previously married					0.033	0.152	0.033	0.152
<i>Parental status (ref: No coresidential child)</i>								
Has a coresidential child					0.011	0.095	0.011	0.095

	Model 1		Model 1B		Model 2		Model 2B	
	b	SE	b	SE	b	SE	b	SE
<i>Educational Attainment (ref: Below high school)</i>								
High School					-0.200	0.199	-0.200	0.199
College or above					-0.472 *	0.230	-0.472 *	0.230
<i>Economic Status (ref: Neither in school/working)</i>								
In school					-2.572 *	1.091	-2.572 *	1.091
Working					-2.542 *	1.091	-2.542 *	1.091
In school and working					-2.530 *	1.090	-2.530 *	1.090
<i>Random effects</i>								
Level 1 residual	4.225 ***		4.225 ***		4.228 ***		4.228 ***	
Level 2 age	0.113 ***		0.113 ***		0.112 ***		0.112 ***	
Level 2 intercept	39.887 ***		39.887 ***		39.952 ***		39.952 ***	
N (Person-Years)	16,568		16,568		16,568		16,568	
N (NLSY79-Young adult child-mother pairs)	5,894		5,894		5,894		5,894	

+ p<.10
 * p<.05
 ** p<.01
 *** p<.001

Source: NLSY79 and 79 Young Adults Survey (1994–2014).

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Figure 1.
Predictive BMI by Intergenerational Coresidence Patterns

Table 1.

Sociodemographic and Health Characteristics of the Sample (Unweighted, Imputed)

	Whole sample		Gone-for-good		Boomerang kids		Never-Left	
	Mean or Percent	SD	Mean or Percent	SD	Mean or Percent	SD	Mean or Percent	SD
Mother's BMI score	29.10	6.36	28.79	6.31	29.65***	6.46	29.51***	6.32
<i>Children's Residential Pattern 18-30</i>								
the Gone-for-good	61.07		/		/		/	
Boomerang kids	21.89		/		/		/	
the Never-left	17.03		/		/		/	
Mom's basic demographics								
Age	46.73	4.82	46.42	4.78	46.17*	4.67	48.58***	4.70
<i>Race/Ethnicity</i>								
Non-Hispanic White (ref)	42.33		46.23		34.36		38.57	
Non-Hispanic Black	35.54		33.53		41.35***		35.33***	
Hispanic	22.13		20.25		24.29***		26.11**	
<i>Marital Status</i>								
Never Married (ref)	11.07		10.14		13.74		10.96	
Married or Cohabiting	54.76		55.19		48.92***		60.70	
Previously married (Separated, Divorced, Widowed)	34.18		34.67		37.34*		28.34*	
<i>Region of Residence</i>								
Northeast (ref)	12.63		10.93		11.91		19.65	
North Central	25.16		27.54		22.3*		20.29***	
South	43.04		42.56		46.04		40.92***	
West	19.17		18.97		19.74		19.13***	
Mother's SES								
Highest Grade Completed	12.87	2.50	12.93	2.49	12.53***	2.34	13.13*	2.69
Logged family income (inflation adjusted)	10.96		10.97		10.84***		11.07***	
Median income (inflation adjusted)	48111.59		48855.19		40319.02		57370.80	
Family size	3.22	1.45	3.04	1.43	3.23***	1.48	3.85***	1.26

	Whole sample		Gone-for-good		Boomerang kids		Never-Left	
	Mean or Percent	SD	Mean or Percent	SD	Mean or Percent	SD	Mean or Percent	SD
<i>Employed</i>	76.99		77.04		75.97		78.10	
<i>Health Insurance</i>								
Private (ref)	64.83		64.87		60.96		69.64	
Public	15.43		15.00		17.19**		14.74	
Self-pay	19.74		20.13		21.85*		15.63***	
Children's life events								
<i>Age</i>	22.95	3.55	23.19	3.55	23.4***	3.58	21.53***	3.11
<i>Sex (ref: Male)</i>								
Female	51.57		54.52		48.96**		44.33***	
<i>Marital Status</i>								
Never Married (ref)	66.94		58.29		68.03		96.53	
Married or cohabiting	30.05		38.58		27.58***		2.63***	
Previously married (Separated, Divorced, Widowed)	3.01		3.13		4.39		0.84	
<i>Parental status (ref: not a parent)</i>								
Yes (is a parent)	37.45		41.32		43.67		15.59***	
<i>Educational Attainment</i>								
Below High School (ref)	17.64		16.22		20.97		18.45	
High School	67.75		66.99		66.61***		71.98	
College or above	14.61		16.79		12.42***		9.57***	
<i>Economic status</i>								
Neither in school or working (ref)	1.35		1.40		1.49		0.98	
In school	5.6		4.55		4.63		10.6***	
Working	65.09		66.81		71.95		50.11	
In school and working	27.96		27.24		21.93+		38.3***	
N (Person-Years)	27,903		17,041		6,109		4,753	
N (NLSY79-Young adult child-mother pairs)	7,197		4,098		1,219		1,880	

Source: NLSY79 and 79 Young Adults Survey (1994–2014).

Note: The bivariate differences between gone-for-good and boomerangers or never-left are included in the table.

All the covariates except mother's race/ethnicity, education, and young adult's gender are time-varying measures.

p<.001

p<.01

**

p<.05

*

p<.10

+

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Results from Multilevel Regression Models with Random Coefficients Predicting Mom's BMI by Intergenerational Coresidential Patterns, 1994–2014

Table 2.

	Model 1A		Model 1B		Model 2A		Model 2B	
	b	SE	b	SE	b	SE	b	SE
Intercept	28.930 ***	0.896	29.549 ***	0.927	26.970 ***	1.015	27.854 ***	1.021
<i>Children's Residential Pattern since Age 18</i>								
the Gone-for-good	ref		−0.620 *	0.249	ref		−0.884 ***	0.257
the Never-left	0.620 *	0.249	ref		0.884 ***	0.257	ref	
Boomerangers	0.467 *	0.218	−0.153	0.284	0.462 *	0.218	−0.423	0.288
<i>Age (centered at 40)</i>	0.142 ***	0.009	0.068 ***	0.018	0.069 ***	0.018	0.003	0.023
<i>Children's Residential Pattern *age</i>								
the Gone-for-good *age	ref		0.074 ***	0.019	ref		0.066 ***	0.020
the Never-left * age	−0.074 ***	0.019	ref		−0.066 ***	0.020	ref	
Boomerangers *age	−0.001	0.014	0.073 ***	0.021	−0.004	0.014	0.061 **	0.021
Mother's Characteristics								
<i>Race/Ethnicity (ref: Non-Hispanic White)</i>								
Non-Hispanic Black	3.473 ***	0.274	3.473 ***	0.274	3.339 ***	0.275	3.339 ***	0.275
Hispanic	1.657 ***	0.316	1.657 ***	0.316	1.612 ***	0.314	1.612 ***	0.314
<i>Marital Status (ref: Married or Cohabiting)</i>								
Never Married	0.006	0.269	0.006	0.269	0.015	0.269	0.015	0.269
Previously married (Separated, Divorced, Widowed)	−0.366 **	0.115	−0.366 **	0.115	−0.363 **	0.115	−0.363 **	0.115
<i>Highest Grade Completed</i>	−0.123 *	0.049	−0.123 *	0.049	−0.088 +	0.050	−0.088 +	0.050
<i>Ln Family income (2014 \$)</i>	−0.092 +	0.054	−0.092 +	0.054	−0.088	0.053	−0.088	0.053
<i>Family size</i>	0.075 *	0.030	0.075 *	0.030	0.084 **	0.031	0.084 **	0.031
<i>Employed</i>	−0.117	0.094	−0.117	0.094	−0.117	0.094	−0.117	0.094
<i>Health Insurance (ref: Private)</i>								
Public	0.239 *	0.115	0.239 *	0.115	0.239 *	0.115	0.239 *	0.115
Self-pay	−0.130	0.081	−0.130	0.081	−0.129	0.081	−0.129	0.081
<i>Region of Residence (ref: Northeast)</i>								

	Model 1A		Model 1B		Model 2A		Model 2B	
	b	SE	b	SE	b	SE	b	SE
North Central	-0.253	0.285	-0.253	0.285	-0.259	0.284	-0.259	0.284
South	0.166	0.248	0.166	0.248	0.140	0.247	0.140	0.247
West	-0.085	0.295	-0.085	0.295	-0.085	0.293	-0.085	0.293
Children's Characteristics								
Age					0.080 ***	0.018	0.080 ***	0.018
Sex (ref: Male)								
Female					0.176	0.137	0.176	0.137
Marital Status (ref: Never Married)								
Married or cohabiting					0.004	0.052	0.004	0.052
Previously married (separated, Divorced, Widowed)					-0.011	0.134	-0.011	0.134
Parental status (ref: Not a parent)								
Yes (is a parent)					0.006	0.066	0.006	0.066
Educational Attainment (ref: Below high school)								
High School					-0.016	0.075	-0.016	0.075
College or above					-0.078	0.113	-0.078	0.113
Economic Status (ref: Neither in school/working)								
In school					-0.042	0.201	-0.042	0.201
Working					0.097	0.196	0.097	0.196
In school and working					0.093	0.198	0.093	0.198
<i>Random effects</i>								
Level 1 residual	4.269 ***		4.269 ***		4.269 ***		4.269 ***	
Level 2 age	0.075 ***		0.075 ***		0.075 ***		0.075 ***	
Level 2 intercept	33.849 ***		33.849 ***		33.875 ***		33.875 ***	
N (Person-Years)	27,903		27,903		27,903		27,903	
N (NLSY79-Young adult child-mother pairs)	7,197		7,197		7,197		7,197	

+ p<.10

* p<.05

** p<.01

Source: NL-SY79 and 79 Young Adults Survey (1994–2014).

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