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A national profile of sandwich generation caregivers providing care to both older adults and children

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Abstract

Background: Many U.S. caregivers provide care to the generation above and below simultaneously, described as "sandwich" generation caregivers. We seek to provide the first national estimates characterizing sandwich generation caregivers and the older adults for whom they care.

Methods: We used the 2015 National Study of Caregiving (NSOC) and National Health and Aging Trends Study (NHATS) to compare individual (demographic, socio-economic, health, and caregiving characteristics) and caregiving-related experience (financial and emotional difficulties, caregiver role overload and gains, supportive services, employment and participation restrictions) between sandwich and non-sandwich generation caregivers. The analysis included adult child caregivers with or without any minor child under 18 years ($n = 194$ and 912 NSOC respondents, respectively) providing care to $n = 436$ and 1217 older adult NHATS respondents.

Results: Of all adult child caregivers, 24.3% also cared for a minor child (i.e., sandwich generation caregivers), representing 2.5 million individuals. Sandwich generation caregivers provided similar care hours to older care recipients as non-sandwich caregivers (77.4 vs. 71.6 h a month, $p = 0.60$), though more of them worked for pay (69.4% vs. 53.9%, $p = 0.002$). Both sandwich generation caregivers (21.0% vs. 11.1%, $p = 0.005$) and their care recipients (30.1% vs. 20.9%, $p = 0.006$) were more likely to be Medicaid enrollees than their non-sandwich caregiving counterparts. More sandwich generation caregivers reported substantial financial (23.5% vs. 12.2%, $p < 0.001$) and emotional difficulties (44.1% vs. 32.2%, $p = 0.02$) than non-sandwich caregivers; they also reported higher caregiver role overload (score: 2.9 vs. 2.4, $p = 0.04$). Their supportive services use was similarly low as non-sandwich caregivers except for seeking financial help (24.8% vs. 14.7%, $p = 0.008$).

Conclusions: Besides caring for minor child(ren), sandwich generation caregivers provided similarly intense care to care recipients as non-sandwich caregivers and had higher labor force participation; they experienced more caregiving-related financial and emotional difficulties and role overload. Policymakers may consider supportive services that address their unique needs and roles.

KEYWORDS
caregiver role overload, emotional difficulties, financial difficulties, intensity of care, sandwich generation

INTRODUCTION

Due to the demographic shifts such as delayed fertility and longer life expectancy, many caregivers in the U.S. provide care to both the generation above (i.e., older adult care) and below (i.e., child care) simultaneously, described as "sandwich" generation caregivers.[1–5] The proportion of adult child caregivers living with a minor child under 18 years more than doubled from 1999 to 2015, growing from 12.6% to 26.0%.[6] The growing size of this group may help account for "support of the sandwich generation" having been an explicit goal of the Biden Administration's Build Back Better infrastructure proposal.[7]

A recent survey conducted by the U.S. Centers for Disease Control and Prevention highlights the potential toll of this dual-caregiving role: during the COVID-19 pandemic, 51.5% of sandwich generation caregivers endorsed serious past-month suicidal ideation (compared with 16.0% of caregivers without a minor child), with odds eight times higher than respondents who were neither parents nor caregivers.[8] And while these caregivers have received recent policy attention, there is surprisingly little research specifically on the sandwich generation caregiving group. The limited work available is based on interviews with relatively small samples,[9–16] drawn from international cohorts,[17–21] or uses an alternative definition of sandwich generation caregivers (e.g., including those caring for the same generation such as spouses or siblings).[22,23]

Given the array of caregivers who work to support older adults, resource-constrained policies and interventions would ideally be tailored to the needs of particular caregivers to maximize their impact, in the same way that clinical medicine aspires to use risk stratification to tailor care based on an individual patient's risk profile. To further this goal, the purpose of this analysis is to explore the construct of sandwich generation caregivers to better understand who they are, to whom they provide care, and their caregiving-related experience relative to other caregivers. This study uniquely provides the first nationally representative analysis of both sandwich generation caregivers and the older adults to whom they provide care by pairing the National Health and Aging Trends Study (NHATS), a nationally representative survey of age-eligible Medicare beneficiaries in the U.S., with the National Study of Caregiving (NSOC), a nationally representative survey of caregivers who support NHATS respondents.

Key points

- In this national survey study, sandwich generation caregivers provided similar hours of care to care recipients as non-sandwich generation caregivers, although more of them were in the paid workforce and, by definition, were caring for at least one minor child.
- Sandwich generation caregivers reported higher caregiving-related financial and emotional difficulties and higher caregiver role overload.

Why does this paper matter?

This study provides the first national estimates of characteristics and caregiving-related experience of sandwich generation caregivers and the older adults for whom they are caring.

METHODS

Data and study populations

We used the 2015 National Health and Aging Trends Study (NHATS) and National Study of Caregiving (NSOC), ongoing longitudinal, nationally representative surveys of U.S. older adults and their caregivers.[24,25] Using both NHATS and NSOC uniquely captures characteristics of both sandwich generation caregivers and the older adults for whom they care. For this analysis, we considered sandwich generation caregivers to be those adult children caregivers who provided care to both a parent aged ≥65 years and at least one minor child under 18 years.[6]

Participants were eligible for NHATS if they were Medicare enrollees aged ≥65 years who lived in the contiguous U.S.[24] The response rate was 73.2%. Of 7576 NHATS respondents, we limited our analysis to those who received assistance with mobility, self-care, or

household activities due to health or functioning reasons from at least one adult child caregiver ($n = 1653$): 436 (32.9%) received assistance from at least one adult child with any minor child under 18 years (i.e., sandwich generation caregiver)[6] and 1217 (67.1%) from adult children without any minor child (i.e., non-sandwich generation caregiver; Figure S1).

NSOC is a supplement of NHATS that surveys family and unpaid caregivers to NHATS participants who received assistance with mobility, self-care, or household activities due to health or functioning reasons.[25] Up to five caregivers per care recipient could be included. The response rate was 61.9%. Of 1653 NHATS respondents receiving assistance from adult child caregivers, 1024 had at least one family and unpaid caregiver participating in NSOC; in 2015, there was a total of 1676 NSOC respondent caregivers. We limited our analysis to adult child caregivers ($n = 1106$ for 735 NHATS respondents): 194 (24.3%) with any minor child under 18 years (i.e., sandwich generation caregiver) and 912 (75.7%) without any minor child (i.e., non-sandwich generation caregiver; Figure S1).

Caregiver characteristics

Information about caregivers was obtained from NSOC. We examined caregivers' socio-demographics (sex, age, race/ethnicity), socioeconomic status (marital status, education, family income, Medicaid enrollment), general health status, and caregiving characteristics (co-residence with care recipient, whether care recipient was living in the community, duration of caregiving, hours of care provided in the last month). Hours of care were imputed for those with missing values.[26] In addition, using the NHATS Other Person file to determine the total amount of help provided to a care recipient, we derived the proportion of total help hours the NSOC respondent caregiver provided, whether they were the sole caregiver (i.e., the only caregiver) or primary caregiver (i.e., providing the highest proportion of total help hours among all caregivers in their network), and number of functional disability-related activities (mobility, self-care, and household activities) for which they provided assistance.

Care recipient characteristics

Information about care recipients' characteristics was drawn from NHATS. We examined care recipients' socio-demographics (sex, age, race/ethnicity), socioeconomic characteristics (marital status, education, family income, Medicaid enrollment, living alone, living in the community versus residential care settings), general health and functional status, and self-reported comorbidities (heart disease, diabetes, lung disease, stroke, cancer, arthritis, hypertension, dementia, depression, anxiety). We measured functional impairment by count of self or proxy report of difficulties in performing or needing help with the following tasks: mobility (getting out of bed, getting around inside and outside [0–3]), self-care (bathing, dressing, eating, and using the toilet [0–4]), and household activities (doing laundry, going shopping, preparing meals, handling banking, and managing medications [0–5]).[27] Information about the nature and intensity of care received by each care recipient was obtained from the NHATS Other Person file, which includes all unique persons that the NHATS respondent identified as providing any functional assistance, along with the hours of care each helper provided. For each care recipient (i.e., NHATS respondent), we calculated the total number of family and unpaid caregivers and the total hours of care received from them in the last month. Hours of care were imputed for those with missing values.[26] Family and unpaid caregivers include individuals related to the care recipient such as spouse, adult children, grandchildren or siblings, as well as unrelated, unpaid helpers such as friends or neighbors.[25]

Caregiving-related experience and employment

Finally, after characterizing the profile of caregivers and their care recipients, we used NSOC to describe the experience of these caregivers, including caregiving-related financial and emotional difficulties, caregiver role overload and gains, use of supportive services, and caregivers' employment and participation restrictions.

Caregivers reported whether providing care was financially or emotionally difficult and, if yes, the extent of difficulties, from 1 (a little difficult) to 5 (very difficult); we categorized a response of 1–2 as "some" difficulty and 3–5 as "substantial".[28]

Caregiver role overload included four items measuring feelings of exhaustion and fatigue related to caregiving on a scale of 0 (not so much) to 2 (very much): (1) feeling exhausted, (2) having more things than they can handle, (3) having no time for themselves, and (4) care recipients' needs changing frequently. Caregiving-related gains included four items: (1) feeling more confident about their abilities, (2) learning how to deal with difficult situations, (3) bringing caregiver closer to care recipient, and (4) giving caregiver satisfaction. The total overload and gain scores ranged from 0 to 8, with higher scores

indicating higher levels of caregiver role overload or gain (Cronbach's α = 0.73 and 0.71, respectively).[29] We also examined whether the caregiver reported "very much" for the separate role overload and gain items.

We examined caregivers' use of supportive services, including support group participation, respite care, caregiving training, and financial support including helping care recipient apply for Medicaid.[30]

Finally, we examined whether the caregiver worked for pay (i.e., from non-caregiving employment) and, among those who did, productivity loss due to caregiving including any missed hours of work because of caregiving in the last month, absenteeism (proportion of missed hours among total hours worked typically), and presenteeism (degree to which the caregiver reported caregiving affected productivity when at work; 0%–100%).[31] Participation restrictions refer to activities limited because of caregiving, including visiting friends or family, attending religious or group activities, and going out for enjoyment.[28]

Statistical analysis

In this descriptive analysis, we first examined characteristics of sandwich generation caregivers compared with non-sandwich generation caregivers (i.e., NSOC respondents), and older adults (i.e., NHATS respondents) who received assistance from a sandwich generation caregiver (i.e., "sandwich care recipients" hereafter) compared with those receiving care from non-sandwich adult child caregivers. We then examined caregiving-related experience of sandwich generation caregivers compared with non-sandwich generation caregivers. We compared differences between each group using adjusted Wald tests and Rao-Scott chi-square tests for continuous and categorical characteristics respectively.

We completed sensitivity analyses with a broader definition of sandwich generation caregivers, including in-laws (e.g., daughters-in-law) and grandchildren of the care recipients who also had a minor child.[14,16] We also revisited caregiver experience using multivariate regression analysis to account for caregivers' demographics, socio-economic status, and caregivers and care recipients' health status.

For all analyses, we used NSOC and NHATS analytic weights to take into account differential probabilities of selection and nonresponse and provide nationally representative estimates for caregivers and the older adults receiving assistance. We used STATA *svy* commands to incorporate strata and clustering elements of the sample design when calculating standard errors of the estimates. Statistical significance was set at two-tailed $p < 0.05$. All analyses were performed using STATA, version 15.1.

RESULTS

In 2015, 194 NSOC respondents cared for both an adult ≥65 years as well as a minor child, representing 2.5 million individuals and 24.3% of all adult child caregivers (Table 1). These sandwich generation caregivers were younger (46.3 vs. 56.5 years, $p < 0.001$) and more likely to be Medicaid recipients (21.0% vs. 11.1%, $p = 0.005$) compared with non-sandwich generation caregivers, but did not vary from non-sandwich generation caregivers across other demographic, socioeconomic, and health characteristics. Sandwich generation caregivers were more likely to assist care recipients that were living in the community than their non-sandwich counterparts (91.3% vs. 78.0%, $p = 0.004$) and had been a caregiver for fewer years (5.5 vs. 7.9 years, $p < 0.001$). Sandwich and non-sandwich generation caregivers provided similar hours of care in the last month (77.4 vs. 71.6 h, $p = 0.60$), accounted for similar proportions of total caregiving hours that care recipients received, and were similarly likely to be the sole or primary caregiver.

In 2015 among NHATS respondents, 32.9% received care from at least one sandwich generation caregiver (Table 2). Sandwich care recipients were younger (76.3 vs. 82.9 years; $p < 0.001$), more likely to be married (42.0% vs. 29.8%; $p < 0.001$), Medicaid enrollees (30.1% vs. 20.9%; $p = 0.006$), and living in the community (86.6% vs. 76.3%; $p < 0.001$). The functional and health status of older adults who did and did not receive help from a sandwich generation caregiver were generally similar. Sandwich care recipients had more family and unpaid caregivers (≥3: 49.1% vs. 34.9%; $p < 0.001$) and received more total hours of care in the last month (173 vs. 133 h, $p = 0.005$).

Sandwich generation caregivers were more likely to experience financial difficulties (substantial: 23.5% vs. 12.2%, $p < 0.001$), emotional difficulties (substantial: 44.1% vs. 32.2%, $p = 0.02$), and report higher caregiver role overload (composite overload score: 2.9 vs. 2.4, $p = 0.04$); caregiving-related gains did not differ (Table 3). Their use of services to support caregiving were similar, though sandwich generation caregivers were more likely to seek financial help for the care recipient, such as helping them apply for Medicaid (24.8% vs. 14.7%, $p = 0.008$). Sandwich generation caregivers were more likely to work for pay than non-sandwich generation caregivers (69.4% vs. 53.9%, $p = 0.002$), but among those who worked, productivity loss due to caregiving did not differ.

Sensitivity analyses showed consistent results with the main findings when using a more broadly defined group of sandwich generation caregivers that included in-laws (e.g., daughter-in-law) and grandchildren of the

TABLE 1 Characteristics of adult child caregivers with and without minor children in a nationally representative sample, 2015

	Adult child caregivers ($N = 1106$)				
	Sandwich generation		Non-sandwich generation		
	Respondents, N (weighted %)	National estimate, millions	Respondents, N (weighted %)	National estimate, millions	*p*-value
Overall	194 (24.3)	2.5	912 (75.7)	7.7	—
Demographics					
Female, No. (%)	122 (57.7)	1.4	639 (64.5)	4.9	0.18
Age, years (SD)	46.3 (6.3)	—	56.5 (9.8)	—	<0.001
<45, No. (%)	58 (35.2)	0.9	41 (8.8)	0.7	<0.001
45–64, No. (%)	133 (63.9)	1.6	647 (73.0)	5.6	
65+, No. (%)	—[a]	—[a]	224 (18.1)	1.4	
Race/ethnicity, No. (%)					
Non-Hispanic white	93 (62.1)	1.5	554 (70.0)	5.4	0.37
Non-Hispanic black	70 (15.8)	0.4	262 (12.3)	0.9	
Hispanic	20 (14.2)	0.3	49 (10.6)	0.8	
Other	11 (7.9)	0.2	47 (7.1)	0.5	
Socioeconomic status					
Married, No. (%)	111 (64.0)	1.6	480 (58.1)	4.5	0.22
Some college or above, No. (%)	146 (73.6)	1.8	612 (68.2)	5.3	0.33
Family income, $, mean (SD)	$73,454 (53,317)	—	$66,000 (79,951)	—	0.19
Medicaid enrollment, No. (%)	39 (21.0)	0.5	98 (11.1)	0.8	0.005
General health status, No. (%)					
Very good or excellent	107 (60.5)	1.5	484 (52.1)	4.0	0.08
Good	52 (24.1)	0.6	228 (22.9)	1.7	
Poor or fair	35 (15.4)	0.4	200 (25.0)	1.9	
Caregiving characteristics					
Co-residence with care recipient, No. (%)	67 (32.6)	0.8	309 (27.4)	2.1	0.31
Care recipients living in the community, No. (%)	181 (91.3)	2.3	741 (78.0)	6.0	0.004
Duration of caregiving, years (SD)	5.5 (5.2)	—	7.9 (9.5)	—	<0.001
Hours of care provided in the last month, *n* (SD)	77.4 (106.5)	—	71.6 (125.9)	—	0.60
Proportion of total help hours provided, % (SD)	40.3 (31.3)	—	45.2 (38.1)	—	0.19
Sole caregiver, No. (%)	22 (11.1)	0.3	137 (13.2)	1.0	0.57
Primary caregiver, No. (%)	83 (39.1)	1.0	516 (48.3)	3.7	0.08
Functional disability-related activities helped					
Mobility (0–3), *n* (SD)	0.6 (0.7)	—	0.5 (0.9)	—	0.64
Self-care activities (0–4), *n* (SD)	0.3 (0.8)	—	0.4 (1.0)	—	0.50
Household activities (0–5), *n* (SD)	1.7 (1.3)	—	1.7 (1.7)	—	0.79

Note: Authors' analysis of data from the 2015 National Study of Caregiving (NSOC) for a cohort of adult child caregivers. Adjusted Wald tests were performed to compare continuous characteristics and Rao-Scott chi-square tests were performed to compare categorical characteristics among adult child caregivers with and without any minor child under 18 years of age (i.e., sandwich vs. non-sandwich generation caregivers). Data were weighted using the NSOC survey analytic weights.

[a]Estimates based on too few cases (< 11) may not be reported, per National Health and Aging Trends Study.

TABLE 2 Characteristics of adults ≥65 years receiving assistance from adult child caregivers with and without minor children in a nationally representative sample, 2015

	Older Adults Receiving help from Adult Child Caregivers ($N = 1653$)				
	≥1 sandwich generation[a]		Non-sandwich generation		
	Respondents, *N* (weighted %)	National estimate, millions	Respondents, *N* (weighted %)	National estimate, millions	*p*-value
Overall	436 (32.9)	2.2	1217 (67.1)	4.4	—
Demographics					
Female, No. (%)	310 (70.7)	1.5	913 (73.5)	3.2	0.21
Age, years (SD)	76.3 (7.4)	—	82.9 (9.6)	—	<0.001
65–74, No. (%)	147 (48.0)	1.1	109 (17.0)	0.8	<0.001
75–84, No. (%)	179 (36.2)	0.8	422 (37.1)	1.6	
85+, No. (%)	110 (15.8)	0.3	686 (45.9)	2.0	
Race/ethnicity, No. (%)					
Non-Hispanic white	238 (66.2)	1.4	773 (74.1)	3.3	0.10
Non-Hispanic black	127 (13.8)	0.3	310 (11.0)	0.5	
Hispanic	47 (12.2)	0.3	81 (8.8)	0.4	
Other	24 (7.8)	0.2	53 (6.0)	0.3	
Socioeconomic status					
Married, No. (%)	154 (42.0)	0.9	299 (29.8)	1.3	<0.001
Some college or above, No. (%)	166 (40.9)	0.9	439 (37.3)	1.7	0.19
Family income, $, mean (SD)	$34,825 (42,354)	—	$35,014 (84,562)	—	0.95
Medicaid enrollment, No. (%)	138 (30.1)	0.7	288 (20.9)	0.9	0.006
Living alone, No. (%)	143 (29.8)	0.6	501 (42.2)	1.9	<0.001
Living in the community, No. (%)	378 (86.6)	1.9	962 (76.3)	3.4	<0.001
Health conditions					
General health status, No. (%)					
Very good or excellent	73 (17.4)	0.4	255 (21.0)	0.9	0.11
Good	133 (29.2)	0.6	400 (32.0)	1.4	
Poor or fair	230 (53.3)	1.2	562 (47.0)	2.1	
Functional limitations					
Mobility (0–3), n (SD)	1.8 (1.2)	—	1.6 (1.4)	—	0.053
Self-care activities (0–4), *n* (SD)	1.8 (1.4)	—	1.6 (1.7)	—	0.09
Household activities (0–5), *n* (SD)	2.9 (1.7)	—	3.0 (2.0)	—	0.51
Comorbidities					
Number of conditions (0–10), *n* (SD)	3.8 (1.8)	—	3.8 (2.1)	—	0.94
Heart disease, No. (%)	179 (40.8)	0.9	485 (38.6)	1.7	0.48
Diabetes, No. (%)	187 (43.2)	0.9	385 (32.5)	1.4	0.005
Lung disease, No. (%)	108 (24.6)	0.5	299 (25.6)	1.1	0.68
Stroke, No. (%)	87 (18.4)	0.4	287 (22.3)	1.0	0.13
Cancer, No. (%)	105 (25.1)	0.5	369 (31.2)	1.4	0.04
Arthritis, No. (%)	330 (72.9)	1.6	906 (73.1)	3.2	0.96
Hypertension, No. (%)	348 (77.7)	1.7	963 (76.6)	3.4	0.70

TABLE 2 (Continued)

	Older Adults Receiving help from Adult Child Caregivers ($N = 1653$)				
	≥1 sandwich generation[a]		Non-sandwich generation		
	Respondents, *N* (weighted %)	National estimate, millions	Respondents, *N* (weighted %)	National estimate, millions	*p*-value
Dementia, No. (%)	135 (28.2)	0.6	447 (32.5)	1.4	0.14
Depression, No. (%)	124 (27.8)	0.6	310 (26.4)	1.2	0.67
Anxiety, No. (%)	89 (23.3)	0.5	251 (22.3)	1.0	0.76
Intensity of care received					
Number of family and unpaid caregivers, No. (%)					
1	44 (10.7)	0.2	257 (22.2)	1.0	<0.001
2	162 (40.1)	0.9	501 (43.0)	1.9	
3+	230 (49.1)	1.0	459 (34.9)	1.5	
Total hours of care received from family and unpaid caregivers in the last month, *n* (SD)	173.3 (254.6)	—	133.1 (251.8)	—	0.005

Note: Authors' analysis of data from the 2015 National Health and Aging Trends Study (NHATS) for a cohort of older adults who received assistance with mobility, self-care, or household activities due to health or functioning reasons from at least one adult child caregiver. Adjusted Wald tests were performed to compare continuous characteristics and Rao-Scott chi-square tests were performed to compare categorical characteristics among older adults who received assistance from at least one adult child with any minor child under 18 years of age (i.e., sandwich generation caregiver) and those receiving assistance from adult children without any minor child under 18 years of age (i.e., non-sandwich generation caregiver). Data were weighted using the NHATS survey analytic weights.

[a]Among the 436 older adults receiving help from at least 1 sandwich generation caregiver, 234 (58.8%) received help from only sandwich generation caregivers and 202 (41.2%) received help from both sandwich and non-sandwich adult child caregivers.

care recipient (who also had a minor child; Tables S1 and S2). The adjusted results of caregiving-related experience of sandwich generation caregivers were also consistent with those in the unadjusted main analysis (Table S3).

DISCUSSION

Although there is no universally accepted definition of sandwich generation caregivers in the existing literature,[32] this study provides a nationally representative analysis of adult caregivers caring for both a parent and a minor (i.e., <18 years) child. In 2015, nearly one quarter of adult child caregivers or an estimated number of 2.5 million individuals provided care to both the generation above and below. Nearly 70% worked for pay, and nearly one quarter endorsed substantial financial difficulty and nearly one half endorsed substantial emotional difficulty. Using NHATS and NSOC together uniquely captures characteristics of both sandwich generation caregivers and the older adults for whom they care, whereas other national surveys (e.g., Behavioral Risk Factor Surveillance System and American Time Use Survey) have only captured the caregivers.[5,22]

Our analysis highlights the extraordinary level of demand faced by these individuals. By a variety of measures, sandwich generation caregivers provided as much care to the generation "above" as did non-sandwich generation caregivers —whether measured as total care hours, proportion of care hours, sole caregiver, or types of functional assistance provided. However, by definition, sandwich generation caregivers were also providing care "below" to a generation of minor children. On average, child care is more time consuming than care provided to older adults.[5] So, while not assessed as part of NSOC, this additional unmeasured caregiving contributes to a significant total amount of caregiving time and effort from sandwich generation caregivers. Furthermore, we found that sandwich generation caregivers were also more likely to be in the paid workforce. The trilemma of older adult care, child care, and employment may impose unique challenges on the economic and health well-being of sandwich generation caregivers.[3]

Older adults receiving assistance from sandwich generation caregivers received more intense care—measured both in terms of the total number of care hours received as well as the total number of caregivers in their network. This additional caregiving may help allow more of these care recipients to remain in a community setting by virtue of the additional caregiving hours provided by their family and other unpaid caregivers.[33] This is particularly notable given a higher proportion of care recipients of

TABLE 3 Characteristics of caregiving-related experience and employment participation among adult child caregivers with and without minor children

	Adult child caregivers ($N = 1106$)				
	Sandwich generation		Non-sandwich generation		
	Respondents, *N* (weighted %)	National estimate, millions	Respondents, *N* (weighted %)	National estimate, millions	*p*-value
Overall	194 (24.3)	2.5	912 (75.7)	7.7	—
Caregiving-related difficulties					
Reported financial difficulties, No. (%)					
None	127 (64.2)	1.6	748 (83.2)	6.4	<0.001
Some	21 (12.3)	0.3	46 (4.6)	0.3	
Substantial	46 (23.5)	0.6	118 (12.2)	0.9	
Reported emotional difficulties, No. (%)					
None	90 (45.4)	1.1	482 (50.5)	3.9	0.02
Some	27 (10.5)	0.3	163 (17.4)	1.3	
Substantial	77 (44.1)	1.1	267 (32.2)	2.5	
Caregiver role overload					
Composite overload score (0–8), n (SD)	2.9 (2.0)	—	2.4 (2.4)	—	0.04
Exhausted, No. (%)	58 (27.4)	0.7	187 (19.6)	1.5	0.11
More than they can handle, No. (%)	45 (25.1)	0.6	158 (16.7)	1.3	0.07
No time for self, No. (%)	45 (19.0)	0.5	170 (16.5)	1.3	0.48
Care recipient's needs change frequently, No. (%)	17 (7.7)	0.2	91 (10.5)	0.8	0.34
Caregiving-related gains					
Composite gains score (0–8), n (SD)	6.2 (1.7)	—	6.0 (2.1)	—	0.49
More confident, No. (%)	100 (45.1)	1.1	445 (43.7)	3.4	0.79
Deal with difficult situations, No. (%)	121 (58.4)	1.5	542 (52.6)	4.0	0.29
Closer to care recipient, No. (%)	142 (70.3)	1.7	641 (67.3)	5.2	0.57
Satisfaction, No. (%)	175 (86.7)	2.1	812 (87.7)	6.7	0.79
Use of supportive services, No. (%)					
Support group participation	—[d]	—[d]	37 (3.7)	0.3	0.68
Respite care	44 (18.8)	0.5	203 (19.9)	1.5	0.77
Caregiver training	19 (10.6)	0.3	75 (6.6)	0.5	0.15
Identify potential financial support for care recipient	52 (24.8)	0.6	132 (14.7)	1.1	0.008
Use of ≥1 supportive service	87 (41.3)	1.0	340 (33.6)	2.6	0.11
Employment and participation in other activities					
Work for pay, No. (%)	130 (69.4)	1.7	433 (53.9)	4.2	0.002
Caregiving prevents from working, No. (%)	36 (17.2)	0.4	108 (11.4)	0.9	0.07
Among those who worked					
Missed work due to caregiving, No. %	36 (17.4)	0.3	173 (16.6)	0.7	0.86
Absenteeism, % (SD)[a]	2.2 (6.7)	—	1.5 (5.0)	—	0.47

TABLE 3 (Continued)

	Adult child caregivers ($N = 1106$)				
	Sandwich generation		Non-sandwich generation		
	Respondents, *N* (weighted %)	National estimate, millions	Respondents, *N* (weighted %)	National estimate, millions	*p*-value
Presenteeism, % (SD)[b]	6.6 (15.6)	—	7.0 (20.4)	—	0.83
Caregiving preventing from participation in valued activities, No. (%)[c]	44 (21.4)	0.5	236 (21.1)	1.6	0.94

Note: Authors' analysis of data from the 2015 National Study of Caregiving (NSOC) for a cohort of adult child caregivers. Adjusted Wald tests were performed to compare continuous characteristics and Rao-Scott chi-square tests were performed to compare categorical characteristics among adult child caregivers with and without any minor child under 18 years of age (i.e., sandwich vs. non-sandwich generation caregivers). Data were weighted using the NSOC survey analytic weights.

[a]Absenteeism referred to the proportion of hours of work missed because of caregiving in the last month among total hours worked typically.

[b]Presenteeism referred to the degree to which the caregiver reported caregiving affected productivity when at work.

[c]Valued activities included visiting with friends or family, attending religious services, participating in group activities, and going out for enjoyment.

[d]Estimates based on too few cases (< 11) may not be reported, per NHATS National Health and Aging Trends Study.

sandwich generation caregivers had Medicaid, which would be the primary payor of their nursing home care. While our analysis raises this potential hypothesis, a longitudinal analysis is needed to test whether this potential delay of institutionalization is, in fact, occurring.

However, this additional care is associated with potential costs for these caregivers, who reported more caregiving-related financial and emotional difficulties and higher caregiver role overload: nearly one quarter reported substantial financial difficulties and 44% reported substantial emotional difficulties. These findings were consistent when adjusted for caregiver and care recipient characteristics. The unique financial strains experienced by sandwich generation caregivers may be related to multiple factors: raising a minor child to 18 years, an estimated cost of $230,000 on average in the U.S.;[34] out-of-pocket spending they contribute toward the older adults' care; and employment-related costs, such as loss of income and career opportunities if caregivers cut back on paid work hours or leave the workforce.[35] Caregivers with lower income are more likely to provide financial support to their parents,[36] which can only further exacerbate their financial strain.

While caregiving related gains were similar for sandwich generation caregivers and their non-sandwich counterparts, the former endorsed more financial and emotional difficulties, as well as higher overload overall. This may not be surprising, given that the amount of care provided is similar, yet the sandwich generation caregivers also are providing child care and a higher proportion of them work for pay. Our findings echo an analysis of caregivers in Canada that found sandwich generation caregivers were more likely to experience stress than caregivers providing only either child or older adult care.[21] Our findings also echo an analysis of caregivers in the U.S. that found sandwich caregiving were associated with poorer general health.[22] Given this pre-existing level of burden, the COVID-related exacerbation in mental health symptoms including suicidal ideation of sandwich generation caregivers is not surprising.[8]

Finally, this work suggests that sandwich generation caregivers do not use more supportive services relative to the non-sandwich generation caregivers, with both groups using relatively few such supports. The only type of service which the sandwich generation caregivers reported seeking more often was financial help, which may reflect the relatively greater disadvantage demonstrated by their higher proportion of enrollment in Medicaid. Given the limited use of supportive services but the relatively high proportion of employed sandwich generation caregivers, they may benefit from specific employment-related supports such as paid time off for caregiving responsibilities.[37]

This study has several limitations. First, this study lacked detailed information about the minor child and the corresponding child care, such as whether the minor child lived in the caregiver's household was a teenager or toddler. Second, NSOC does not capture whether the caregiver has grandchildren for whom they are providing care, which is likely for those in their 50s.[38] Finally, we used the most recent years of these surveys that can be used to generate nationally representative cross-sectional estimates, which was in 2015; our analysis does not account for the impact of COVID-19 on these caregivers.

In conclusion, our analysis of paired nationally representative surveys provides a profile of sandwich generation caregivers, who are providing "upwards" care equivalent to their non-sandwich counterparts. However, this is in addition to care provided to minor child(ren) in their household and higher rates of labor force

participation. While few elements of the Biden Administration Build Back Better plan have made it into law, the critical societal role of caregivers continues to receive attention.[39] Research and policy to support caregivers may have greater impact if tailored to the needs of specific populations of caregivers such as sandwich generation caregivers, given their unique combinations of roles across the workforce, raising children, and helping their older parents.

AUTHOR CONTRIBUTIONS

Study concept and design: Lei and Maust. *Acquisition, analysis, or interpretation of data*: All authors. *Drafting of the manuscript*: Lei. *Critical revision of the manuscript for important intellectual content*: All authors. *Approval of the submitted version*: All authors.

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CONFLICT OF INTEREST

All the authors declare no conflict of interest.

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No sponsor had any role in the design and conduct of the study; collection, management, analysis, and interpretation of the data; preparation, review, or approval of the manuscript; and decision to submit the manuscript for publication.

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SUPPORTING INFORMATION

Additional supporting information can be found online in the Supporting Information section at the end of this article.

Figure S1. Study Cohorts

Table S1. Characteristics of Adult Child, Child-in-law, and Grandchild Caregivers With and Without Minor Children in a Nationally Representative Sample, 2015

Table S2. Characteristics of Caregiving-related Experience and Employment Participation among Adult Child, Child-in-law, and Grandchild Caregivers With and Without Minor Children in a Nationally Representative Sample, 2015

Table S3. Characteristics of Caregiving-related Experience and Employment Participation among Adult Child Caregivers With and Without Minor Children: Adjusted Analysis

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