

Undergraduate caregivers for individuals with chronic conditions: Stressors and needs

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Abstract

This study examined informal caregiving experiences for relatives with a chronic health condition among 330 undergraduate students. Twenty-six percent of the sample reported caregiving experiences, and those who did provided an average of 30 hours/week of care for individuals with diagnoses including cancer, neurological illnesses, or cognitive disorders. Undergraduate caregivers reported providing various types of care, especially emotional support, personal care, and household duties. Current caregivers reported higher depression, marginally lower grade point averages, and higher employment rates. Findings suggest that undergraduate caregivers need mental health resources to manage caregiving-related stressors that interfere with academic performance and college adjustment.

Introduction

Through advances in medical treatment and effective public health strategies, an adult in the United States may live 30 years longer than those who lived a century ago [1]. The current percentage of older adults in the United States is growing at an unprecedented rate, and the Centers for Disease Control [1] estimates that by 2050, the number of Americans aged 65 or older will be more than double the number of older adults in 2010. Yet chronic conditions such as heart disease, cancer, stroke, and dementia affect more than a quarter of all Americans, particularly older adults [1]. These trends have increased the need for long-term caregiving of older adults often by younger family members in the beginning of their professional and childbearing years [1]. At present, 3.6-5.5 million young adults (i.e. 18-25 years old) provide care to family members with chronic illnesses [2-3].

Due to the high prevalence of young adult caregivers, many of whom may be enrolled in undergraduate institutions, it is important to examine the impact of caregiving on this population's mental health, adjustment to college, and academic performance. Researchers have found that young caregivers have more challenges related to educational and career achievement than their non-caregiving peers [4]. Caregiving responsibilities may limit young caregivers' abilities to complete coursework and they may also increase fatigue [5-6]. Dellman-Jenkins, *et al.* [7] reported that young caregivers of older relatives struggled with maintaining a social life, marriage and dating relationships, careers, and school. Similarly, young caregivers report feelings of social isolation and limited peer support because of fewer opportunities for establishing relationships with others outside of their households [5]. Young caregivers are more likely to experience caregiver burden when caregiving coincides with a young adult's plans for higher education, a long-term career, or family goals [7-8]. Furthermore, young caregivers experience an increase in depression after taking on the caregiver role [7].

As with other populations of caregivers, the current literature on young adult caregivers suggests that caregiving can interfere with achievement of academic and career goals [4-6], limit opportunities for social engagement and sustaining meaningful relationships [5,7], and

lead to increased feelings of stress, burden, and depression [7-8]. Scant research has examined the effects of caregiving on mental health, quality of life, academic adjustment, and future plans among young adult caregivers enrolled in college. As the need for young adult caregivers increases and young adults will likely continue to struggle with balancing family obligations and school/work demands while achieving social and personal goals, research and clinical recommendations that address the emotional, social, and academic needs of young adult caregivers can contribute significantly to improving their quality of life.

The objectives of the current study were to 1) identify demographic, academic, and mental health differences between college students with caregiving experience and those without, and 2) describe the duration and types of caregiving experiences that college students have had. In line with prior studies of young adult caregivers and college caregivers [6-8], it was hypothesized that college caregivers would endorse greater symptoms of depression and distress [7-8] and report lower grade point averages than non-caregiving peers.

Method

Participants

Participants were undergraduate students enrolled in psychology courses at a large urban university. Students were eligible to participate if they were over the age of 18 and consented to study participation. A total of 343 students completed the study. Only participants who answered at least five of seven reliability-check items (71%) correctly were included in the current study. Twenty-one participants were

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excluded because of inconsistent responding and missing data for primary variables of interest. The final sample included data from 330 participants. Demographic characteristics of the final sample are described in Table 1.

Measures

Demographics and future plans questionnaire: A researcher-created questionnaire assessed participant age, sex, college semesters completed, overall grade point average, race/ethnicity, relationship status, employment status, living situation, family social class/annual household income, perceived likelihood of attending graduate school, and perceived likelihood of placing a loved one in a nursing home.

Caregiving experiences questionnaire: This measure was created by the authors to assess participants' past and current informal caregiving experiences for family members with a chronic health condition, which was defined as "a disease or disability that lasts for three months or longer." Participants reported any caregiving experience, regardless of whether they were the primary caregiver or

if they provided assistance to a primary caregiver in their household. Items assessed relationship to the care recipient, duration of caregiving, hours of care provided weekly, conditions that care recipients needed care for, and the type of caregiving tasks completed. Participants who identified themselves as providing care at the time they completed the study were characterized as "current caregivers," and those who had provided care in the past, but were not providing care at the time of study completion were characterized as "past" caregivers.

Patient health questionnaire-9 (PHQ-9): The PHQ-9 is a 9-item scale assessing symptoms of depression. Respondents rate how often each item has bothered them on a 4-point Likert scale (0 = not at all to 3 = nearly every day). Responses for each item are summed to provide a score between 0 and 27 [9]. Scores are grouped into ranges: no depression (0-4); mild depression (5-9); moderate depression (10-14); moderately severe depression (15-19); and severe depression (20-27). The PHQ-9 has been shown to have excellent internal consistency (α 's .86 to .89) in validation studies, as well as in the current sample (α = .88). The scale also has good test-retest reliability (α = .84) in validation samples.

Table 1: Demographic & Mental Health Differences between Never Caregivers and Past/Current Caregivers

Variable	Past Caregiver (<i>n</i> = 57)	Current Caregiver (<i>n</i> = 29)	Never Caregiver (<i>n</i> = 244)
Age, years, mean (<i>SD</i>)	22.82 (5.12)** ^s	23.66 (7.64)** ^s	21.13 (3.34)
Sex, %			
Female	80.4	72.4	68.6
Male	19.6	27.6	31.0
College semesters completed, mean (<i>SD</i>)	5.57 (2.98)	4.93 (3.09)	4.80 (2.89)
Grade point average, mean (<i>SD</i>)	2.93 (0.63)	2.88 (0.49)* ^s	3.09 (0.53)
Race/Ethnicity, %			
White	44.6	41.4	43.3
Black	26.8	31.0	23.3
Asian	14.3	3.4	18.8
Hispanic/Latino	8.9	10.3	5.3
Mixed	5.4	13.8	9.4
Relationship status, %			
Single	42.9	41.4	50.2
Partnered	57.1	58.6	49.8
Employment Status, %			
Part-time (no more than 35 hours/week)	44.6	51.7** ^s	40.8
Full-time (at least 36-40 hours/week)	10.7	24.1** ^s	6.9
Unemployed	44.6	24.1	52.2
Living Situation, %			
With a roommate or friends	50.0	41.4	59.6
With family	25.0	44.8* ^s	22.0
With a romantic partner	8.9	10.3* ^s	6.1
Alone	16.1	3.4	12.2
Family's social class/annual household income			
Upper Class (\$200,000 and higher)	1.8	3.4	6.5
Upper Middle Class (\$60,000-199,999)	62.5	55.2	53.1
Lower Middle Class (\$30,000-59,999)	21.4	27.6	26.5
Working Class (\$15,000-29,999)	10.7	6.9	10.6
Lower Class (\$7,000-14,999)	3.6	6.9	3.3
Likelihood to attend graduate school, <i>M</i> (<i>SD</i>)	5.51 (1.85)	5.14 (1.80)	5.63 (1.81)
Likelihood to place a family member in a nursing home, <i>M</i> (<i>SD</i>)	2.86 (1.66)** ^s	3.24 (1.68)	3.61 (1.81)
Mental Health Outcomes			
Depression (PHQ-9 score), <i>M</i> (<i>SD</i>)	6.37 (5.47)	9.17 (7.13)* ^s	6.50 (5.18)
Anxiety (GAD-7 score), <i>M</i> (<i>SD</i>)	4.70 (3.98)	4.70 (3.98)	5.40 (4.95)
Satisfaction with Life (SWLS score), <i>M</i> (<i>SD</i>)	23.89 (7.04)	23.89 (7.04)	23.43 (6.68)

Note. Comparisons use those who were never a caregiver as reference. * = $p < .05$; ** = $p < .01$; ^s d = Cohen's d of small (0.20), medium (0.50) or large (0.80) effect size; *M* = mean; *SD* = standard deviation.

Generalized anxiety disorder-7 (GAD-7): The GAD-7 is a 7-item scale used to measure symptoms of anxiety [10]. Respondents rate the degree to which various items have bothered them over the past two weeks using a Likert scale ranging from 0 (not at all) to 3 (nearly every day). Total scores range from 0 to 27, and scores are characterized by the following ranges: mild anxiety (5-9), moderate anxiety (10-14), and severe anxiety (15-21). The GAD-7 has shown good internal consistency both in standardization samples ($\alpha = .92$) and in the current sample ($\alpha = .92$), as well as very good test-retest reliability and convergent validity in validation studies [10].

Satisfaction with life scale (SWLS): Participants completed the SWLS, a 5-item self-report measure of global life satisfaction [11]. Respondents rate each item according to a 7-point Likert scale (1 = strongly disagree to 7 = strongly agree). Higher scores represent higher life satisfaction [12]. The current sample demonstrated good internal consistency ($\alpha = .89$).

Procedure

Prior to recruitment, the Institutional Review Board reviewed and approved this study. Participants received an email from study personnel that described the study and provided a link to the survey. Students reviewed and completed an online consent form prior to data collection. Eligible participants completed the survey and submitted their responses using the online platform (surveymonkey.com). Participants received extra credit for completing the survey.

Data analyses

Demographic characteristics and future goals of students with and without caregiving experience were compared using two sets of analyses of variance (ANOVAs) for continuous variables: (1) current caregivers vs. never caregivers, and (2) past caregivers vs. never caregivers. Similarly, two parallel sets of chi-square tests assessed differences on categorical variables. Then, two parallel sets of ANOVAs compared mental health scores (GAD-7, PHQ-9, and SWLS) between current caregivers and never caregivers and between past caregivers and never caregivers. Univariate analyses were chosen to assess the research questions because of the study's purpose in examining the effects of caregiving on very diverse sets of outcomes and not on a linear combination of these outcomes [13,14]. To account for the high positive and moderate negative correlations among the mental health variables [PHQ-9 and GAD-7 scores, $r(330) = .76, p < .001$; PHQ-9 and SWLS scores, $r(330) = -.45, p < .001$; and GAD-7 and SWLS scores, $r(330) = -.37, p < .001$.], multiple ANOVAs were chosen to assess differences between caregiving groups and each mental health dependent variable. As suggested by Tabachnick and Fidell [14], when using dependent variables that are moderately to highly correlated, MANOVAs are often less powerful than ANOVAs, and in fact the correlations between depression and anxiety approached singularity, which would rule out the use of a MANOVA. Modified Holm-Bonferroni corrections [15] were used to reduce family-wise error within each of the sets of comparisons (within demographic differences, future plans and goals, and mental health). This approach involves an α correction within each successive comparison (in order of statistical significance) to account for the increasing numbers of comparisons. For example, within a set of comparisons, the lowest p -value is evaluated with an $\alpha = .05$, the second lowest p -value with an $\alpha = .025$ ($.05/2$), the third lowest p -value with an $\alpha = .016$ ($.05/3$), the fourth lowest p -value with an $\alpha = .013$ ($.05/4$), and so on, such that the α level for each successive comparison, in reverse order of significance, is set to $\alpha = .05/(\# \text{ of prior comparisons})$. Comparisons continue until the p -value has surpassed the corresponding α level.

Results

Eighty-five students (25.8%) reported past or current caregiving experience and of those, 28 students (32.9% of caregivers) reported that they were currently providing care to a family member or friend with a chronic health condition. Demographics of students without caregiving experience, as well as those with current and past caregiving experience appear in Table 1.

Demographic differences

Students with either past, $F(1, 299) = 9.41, p = .002$ (evaluated at $\alpha = .016$), or current caregiving experiences, $F(1, 273) = 10.37, p = .001$ (evaluated at $\alpha = .050$), were older than non-caregivers. Current caregivers reported marginally lower grade point averages when compared to students without caregiving experience, $F(1, 263) = 4.05, p = .045$ (evaluated at $\alpha = .010$). Current caregivers were more likely to be employed, $\chi^2(2) = 13.65, p = .001$ (evaluated at $\alpha = .025$), and marginally more likely to live with family members or romantic partners, $\chi^2(3) = 9.48, p = .024$ (evaluated at $\alpha = .013$), than students without caregiving experience. There were no significant differences in sex, race/ethnicity, relationship status, or socioeconomic status between either caregiving group and non-caregivers.

Future plans and goals

The groups did not differ in terms of how likely they felt they were to attend graduate school. As seen in Table 1, past caregivers were less likely than never caregivers to place a family member in a nursing home if the family member needed care in the future for a chronic health condition, $p = .003$ (evaluated at $\alpha = .050$); current caregivers reported this likelihood at the same level as never caregivers.

Mental health

Current caregivers reported higher depression scores than never caregivers, $F(1, 273) = 6.32, p = .013$ (evaluated at $\alpha = .050$), which was a small-sized effect (Cohen, 1988). Past caregivers reported equal levels to never caregivers, $F(1, 300) = .19, p = .660$. There were no differences between caregivers and non-caregivers in terms of satisfaction with life or anxiety.

Descriptions of caregiving experiences

As seen in Table 2, students with caregiving experience ($n = 85$) had provided care for a mean of over two years and for nearly 30 hours of care per week. The majority of care recipients were grandmothers, and the most frequently endorsed chronic conditions requiring care were cancer, neurological diseases, and cognitive disorders. Participants provided assistance with multiple tasks, most commonly emotional support, personal care, and household duties.

Discussion

The purpose of the current study was to identify and characterize a sample of college students with past or current caregiving experiences and to compare their demographic characteristics, future goals, and mental health to undergraduates without caregiving experience. Twenty-six percent of the sample reported past or current caregiving experience; caregivers provided on average nearly 30 hours of care weekly for more than two years. Although caregivers and non-caregivers did not differ on future plans and goals, all caregivers were older. Current caregivers had marginally lower grade point averages, were marginally more likely to live with family, and were more likely to be employed. Current caregivers had higher depression. Care recipients

Table 2. Descriptions of Students' Caregiving Experiences (n =85)

Variable	Value
Relationship to care recipient, %	
Grandmother	32.6
Grandfather	16.3
Mother	15.1
Father	14.0
Aunt	3.5
Sibling	4.7
Friend	5.8
Other	4.7
Weekly time caregiving, hours, mean (SD)	29.40 (42.80)
Total time caregiving, months, mean (SD)	24.75 (39.47)
Chronic health condition requiring care	
Cancer	31.7
Neurological disease or disorder	13.4
Cognitive disorder	11.0
Musculoskeletal disease or disorder	8.5
Cardiac and respiratory diseases	8.5
Multiple chronic conditions	6.1
Mental health conditions	6.1
Diabetes	3.7
Autoimmune diseases	3.7
Post injury or surgical care	3.7
Other	3.7
Types of Care Provided	
Emotional support	77.9
Personal care	72.1
Household duties	70.9
Mobility/walking	52.3
Transportation	48.8
Medication management	47.7
Financial	11.6

Note. SD = standard deviation

were predominately older family members with cancer, neurological illnesses, or cognitive disorders. Caregivers provided various types of care, especially emotional support, personal care, and household duties.

Demographic differences

Students with caregiving experience were older. Additionally, the findings that students who were currently caregivers had marginally lower grade point averages, greater employment, and a marginally higher rate of having living arrangements with family or romantic partners suggest that college students with any caregiving experience may have delayed enrollment in college or may be extending their enrollment in college. This could be due in part to balance the demands of coursework, family, and financial obligations. Current caregivers had higher rates of employment than non-caregivers, which may be attributed to earlier entry into the workforce because of greater financial obligations or family roles. Their marginally lower grade point averages may reflect the cumulative impact of managing multiple demands on their time, cognitive and physical energy, and coursework. Other studies of young caregivers have shown caregiving to be associated with fatigue [6], missed time from school, academic withdrawal [15,16], difficulty adjusting to college [8], declines in academic achievement [4], and difficulty with maintaining social relationships [7]. Alternatively, non-caregivers may come from families where other members have assumed caregiving roles or they may prioritize educational attainment

over fulfillment of caregiving roles. As such, they may have more time as well as cognitive, physical, and emotional resources to devote to academic work.

Many current caregivers reported living with family members and/or romantic partners. Although participants in the current study did not specify if they lived with the care recipient, in other samples of caregivers, co-residence with the care recipient has been associated with increased burden and psychological distress among caregivers [16-18], and with increased interference in school work and in extracurricular participation among young caregivers [16]. This sample's tendency to live with family or romantic partners may be attributed to intergenerational households, financial constraints, and accessibility to the care recipient. Non-caregivers were marginally more likely to live with friends and roommates, which reflects the typical living situation of many college students and may facilitate peer support and norm acculturation that have been associated with increased academic achievement and improved psychological adjustment to college [19,20].

Future plans and goals

No differences were observed between caregivers and non-caregivers in their likelihood of attending graduate school. Past caregivers were least likely to place a family member in a nursing home if the family member needed care in the future for a chronic health condition, while non-caregivers and current caregivers indicated a greater likelihood of placing a loved one in a facility should they need assistance.

The finding that past caregivers were significantly less likely to consider placing a loved one in a nursing home may reflect preparation for future caregiving, expectations that promote informal caregiving, and satisfaction from fulfilling prior caregiving responsibilities. Most likely it reflects the absence of determinants associated with increased nursing home placement such as older caregiver age, cognitive decline in patient, caregiver burden, and disruptive patient behaviors [21]. Prior findings suggest that over time nursing home placement increases due to decreased work productivity, interrupted career goals [22-24], and emotional burden [23]. Our findings that never caregivers may be more likely to place their loved ones in a nursing home may account for their perceived lack of preparation for caregiving or potential occupational interference.

Mental health

Current caregivers reported higher depression than their non-caregiving peers. In previous studies, caregiving has been associated with increased depression and burden across various age and illness groups [7-8,25]. Young adult and college caregivers report depression and burden even among with limited caregiving experience [7-8]. The absence of this relationship among past caregivers suggests that caregiving may lead to an acute, but not chronic, change in mental health.

Several factors may account for reduced mental health among current caregivers in this sample. Caregiving tasks may require a significant amount of time and energy and can be distressing to individuals without the skills in providing care. Caregivers may experience stress as a reaction to changes in the quality of their relationship with the care recipient, changes in the care recipient's medical condition, increased financial obligations, changes in their family dynamics, fewer sources of social support, and inadequate coping resources [18,23,26]. Caregivers in this study are especially vulnerable to role engulfment, which is a loss of identify outside of the role of caregiving [27], given their potentially developing identities as college students and caregivers. Caregivers

may perceive that others have higher expectations for them-both as students and as caregivers-and when unable to meet these expectations, they may experience feelings of failure, self-deprecation, and increased worry [16].

Despite these mental health issues, caregivers' satisfaction with life was no different from non-caregivers. In other studies, decreased life satisfaction has been associated with frequently providing support with basic activities of daily living, unemployment, few social resources, declining health, and caregiver burden [27,28]. However, in the current sample, caregivers reported high levels of life satisfaction, which correlates with findings from other studies where as many as 83% of caregivers described caregiving as a positive and meaningful experience [29-31] especially when the care recipients' needs were met [32]. In a study of young adult caregivers, Dellmann-Jenkins, *et al.* [7] reported that caregivers described several positive and long-lasting outcomes such as pleasant memories, increased relationship quality, self-respect, prevention of institutionalization, and reduced financial strain. As in other samples, positive outcomes of caregiving may have buffered negative mental health effects and improved caregiver coping [33], particularly for past caregivers

Caregiving experiences

This sample reported a higher prevalence rate of caregiving, but a duration of caregiving and types of care provided that were consistent with other samples of young caregivers (i.e., one to five years of caregiving) [7]. In one other study of young adult caregivers, defined as individuals ages 18-25, Levine, *et al.* [34] reported that 12-18% of adult caregivers were young adults within this age range, while other studies have estimated that 22-28% of primary caregivers for older adults may be young adult family members [35,36]. This sample's higher caregiving rates may reflect the university community from which the sample was drawn. The data were collected from an urban, public university heavily enrolling students from the larger metro area, with 88% of freshmen being in-state and nearly half being of a racial/ethnic minority group. The high percent of reported caregiving experiences could also reflect a large need for caregiving in the US by younger adults coinciding with increased chronic illnesses and decreased mortality [1].

In addition to the high rates of caregiving in the current sample, those who were caregivers reported an extremely long duration of care, with nearly 30 hours per week devoted to the care recipient on average for over two years. This time commitment could detract from school work and extracurricular activities that more traditional college students may be able to partake in. This is particularly notable given that current caregivers reported higher rates of employment while attending school than non-caregivers. This extreme demand of caregiving time, in addition to employment, may account for some of the mental health issues and lower grade point average found among current caregivers in this study.

Caregivers in the current study provided several different types of care to relatives and friends predominately with cancer. As demonstrated in other samples of young caregivers, participants endorsed care across multiple domains. While emotional care, personal care and assistance with household chores were most commonly endorsed, these tasks reflect services that are age-appropriate and frequently reported by other groups of young caregivers [7,16] as well as needs consistent with individuals with cancer, neurological illnesses, and cognitive disorders. As expected and consistent with other samples of caregivers, participants were less likely to report assisting with financial needs given the economic burden of caregiving and possible

delayed entry into the full-time workforce [36]. Also consistent with previous findings, grandmothers and older adult relatives emerged as predominant care recipients. By contrast, in this sample, a larger percentage of care recipients received care for cancer, while in other samples caregivers of older adults typically provided care for dementias and functional declines related to older age (i.e., ambulation difficulty, difficulty with completing basic and instrumental activities of living) [16]. This sample's higher reporting of cancer caregiving may reflect improvements in cancer treatments and survivorship [37].

Implications

As the need for younger caregivers increases, research that helps clinicians and university staff identify those at risk for negative psychosocial and academic outcomes is essential to tailor current mental health interventions. College caregivers could benefit from skill-based interventions designed to improve time management, assertive communication, and stress-management, many of which are already used in college counseling centers [38,39]. For example, counselors can provide psychoeducation about the bidirectional relationships between academic and caregiving stressors to help students identify current stressors and intervention targets. They can use role plays to teach students assertive communication strategies and practice problem solving skills to help students ask professors for extensions on assignments or request assistance from other family members. Similarly, clinicians can provide instruction on relaxation strategies such as deep breathing, progressive muscle relaxation, and visualization. Also, they can provide instruction on cognitive restructuring to address cognitive distortions and negative appraisals associated with increased caregiver stress [40].

In other caregiver populations, such as dementia caregivers, programs consisting of modules on problem-solving, communication, psychoeducation about caregiver burden, stress management, and disease specific education about symptom management have demonstrated short and long-term efficacy in reducing caregiver stress, depression, and improving caregiver quality of life [41,42]. In order to address the emotional support needs of student caregivers, like those in this study, college counseling centers could provide similar interventions either in person, via telephone, or create videos and online modules those student caregivers could complete at home to improve access to these resources. University counseling centers have begun creating online trainings for instruction on study skills, relaxation, sleep hygiene, and management of substance use [39,43], and many of these behaviorally focused interventions could be applied to student caregivers, especially those reporting depression, increased worry, and caregiver burden. Alternatively, offering these modules in a group format could facilitate peer support and normalization in addition to providing didactic instruction on behavioral strategies. Additionally, providing referral information to illness specific support groups within the community can improve knowledge, peer support, and access to resources like respite care [7].

This study's finding that current caregivers are older students fulfilling multiple roles while enrolled in college demonstrates a demographic shift among college students and a need for more studies to better characterize undergraduate caregivers and their experiences as more college students assume multiple roles while achieving personal and professional goals. At the institutional level, college counseling centers may want to partner with admissions offices, university health services, and the office of student affairs to conduct campus wide needs assessments and social media campaigns to reach out to college

caregivers, ascertain what mental health and academic support services they need, and inform students of available resources. Clinicians could provide trainings within student affairs and academic departments to educate instructors and administrators on ways to accommodate the needs of college caregivers (i.e., more flexibility with due dates and course registration). Implementing or increasing access to tutoring, online course offerings, and online lectures may also help college caregivers simultaneously provide care for a relative and complete coursework [16], which may help caregivers manage multiple demands with limited time while reducing the amount of stress that they may feel due to missing classes in order to provide care for a family member. Finally, because caregivers were more likely to be employed in the current study, this might imply a higher financial need, and as a result, scholarships may be set aside specifically for students providing care to a loved one with a chronic condition [44].

Limitations and conclusions

This study has several limitations. Although the purpose of this study was to characterize a sample of college students with caregiving experience, the use of a convenience sample of students enrolled in psychology courses at a large, urban university limits the generalizability. College students represent a small subgroup of caregivers, and the students in this sample may differ significantly from other groups of college student or young adult caregivers in different regions of the US and globally. Despite this, the sample was extremely diverse and representative of trends in racial/ethnic group representation. Similarly, as demonstrated by the older ages and current employment status of many of the caregivers in this sample, college caregivers may choose to enroll in two-year institutions instead of four-year undergraduate institutions like that in the current study. Future studies that sample from college health centers, counseling centers, community support groups, two- and four-year institutions, and multiple institutions will capture a more comprehensive group of college caregivers.

Second, this study's primary goal was also to describe the experience of caregivers with respect to demographic variables and mental health. Future studies may expand on these findings by using qualitative and quantitative methods to examine aspects that may account for the reduced mental health in current caregivers such as the care recipient's level of functioning and/or disability, the caregiver's current coping strategies, access to social support, effectiveness of coping strategies, support from other family members with caregiving tasks, unmet needs, and perceived burden. Additionally, assessing self-reported work productivity, information about course load, fatigue, and ratings of changes in academic performance that have occurred since assuming a caregiving role may illuminate specific effects of caregiving on academic performance.

Future studies that assess theoretical constructs identified among other caregiver groups, can advance the literature by elucidating mechanisms of poorer mental health among college caregivers and identifying intervention targets to alleviate caregiver distress. In light of these limitations, this study is one of the first to provide knowledge on the prevalence of caregiving experiences among college students and its effect on college performance and mental health, as well as to offer specific recommendations for clinicians.

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Competing interests

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