Generational Link: Youth Supporting Older Adult Caregiving Through Technology Use

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Abstract

Caregiving research has long pointed to a deficiency in formal healthcare resources to support a growing number of older adults in the United States. Recent literature has also highlighted the presence and importance of the previously hidden population of informal youth caregivers who provide indispensable support for older members of their family units. Given the national concern over the rising costs of long-term care (LTC) services and caregiver supports along with the rise in the use of virtual and technological services, a separate body of research has emerged exploring the cost-effective nature of technology in LTC and the alleviation of caregiver burden. To bridge these bodies of research, this study utilized a cross-sectional and descriptive correlational design analyzing data from the 2019 Caregiving in the U.S. dataset to investigate the potential linkages and benefits of the presence of youth as technological brokers in multigenerational households that utilize forms of caregiving technology (N=1122). Youth presence is conceptualized as social support of households that care for one or more older adults while dependent variables reflect the use of caregiver technology supports. The researcher hypothesized that the presence of youth in the household would predict higher utilization of caregiver technologies. Results of an ordered logistic regression (OLR) revealed a significant difference in the odds ratios of caregivers with higher incomes being more likely to utilize assistive technologies compared to lower incomes (OR = 1.60, 95% CI [1.17, 2.19], p<0.01), as well as a significant difference in the odds of caregivers who live with their care recipients utilizing assistive technologies compared to those who lived separately (OR = 1.65, 95% CI [1.21, 2.27], p<0.01). Caregivers with more individuals in their households were more likely to utilize assistive technologies than those with lower numbers (OR = 0.52 [0.32, 0.85], p<0.01). Youth presence as a form of social support approached significance (OR = 1.52, 95% CI [1.00, 2.33], p<0.10). Despite its limitations, the current study findings have important research and practice implications, and the supportive factors incumbent on youth presence in a caregiver's household warrants more specialized study relative to caregiver utilization of assistive technologies.

Background

- The current literature base identifies a calculated lack in the formal healthcare workforce to provide adequate assistance and keep pace with the growing number of older adults nationwide (Gross & Eshbaugh, 2011; Lester et al., 2020; Meiboom et al., 2015 etc.).
- As family comprises the most basic unit of our social system, an estimated 53 million "family" or "informal" caregivers contribute substantially to the economic burden being felt by the weight of institutionalized and other forms of formal care providers.
- In recent years, broader caregiving research has revealed the previously hidden population of children as caregivers or "caregiving youth" helping primarily in the realm of healthcare related services (D'Amen et al., 2021; Hendricks et al., 2021; Kavanaugh et al., 2016).
- Given the national concern over the rising costs of LTC services and caregiver supports along with the irreversible effect of COVID-19 on the forced transition to virtual healthcare delivery and management, a separate body of research has emerged exploring the cost-effective nature of technology in LTC and the alleviation of caregiver burden.
- Due to youth being more adept in new media and technology adoption compared to older generations and, given the gaps in the current research on youth caregivers and caregiving echnology, this research leverages the opportunity to identify the conceptual link between youth residing in multigenerational households in the utilization of caregiving support technologies.
- To answer the proposed research question, this study analyzed data gathered from the National Alliance on Caregiving's 2019 national study on family caergivers.

Research Question

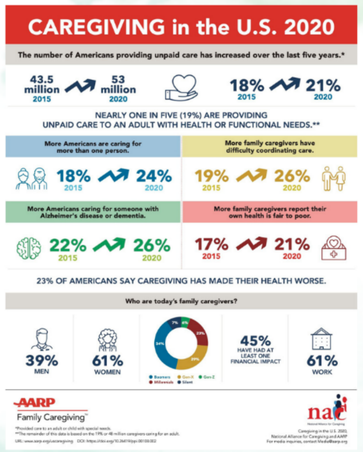
How is the presence of children in a household caring for an older adult aged 50+ associated with use of caregiving assistive technologies as a characteristic of social support?

Hypothesis

The presence of youth in the household caring for an older adult(s) 50+ would predict higher utilization of caregiver technologies

Study Design

This study was of a cross-sectional and descriptive correlational design using a secondary data analysis. The primary data source was the Caregiving in the U.S. dataset collected by the National Alliance for Caregiving (NAC) and the American Association of Retired Persons (AARP). This dataset, which includes respondent data from 2014 and 2019, was selected for this study because of (1) up-to-date information on technology usage by caregivers (2) includes specific questions pertaining to presence of youth and caregiving youth (3) and demonstrates continuous refinement of sampling and longitudinal data collection since the first iteration in 1997.



(*left*) **Figure 1. Unpaid Caregiver Statistics Caregiving in the U.S. 2020 survey**

Measures/Analysis

The independent variable in this study was the presence of children in the caregiver's household which is also conceptualized as a dimension of caregiver socioeconomic support. The dependent variables reflected use of caregiver technology support categories and were divided into 'online services' and 'technology/software'. Self-reported caregiver demographics along with socio-economic information were included as covariates of interest.

Univariate analyses including percentages, means, and standard deviations were used to describe the characteristics of caregivers and the caregiving technology support variables. The ordered logistic regression (OLR) was used for this study because caregivers' use of the caregiving technology supports was measured at an ordinal level. To reduce bias, non-response records from the independent variables of interest were removed from the data frame. An OLR was performed on the collapsed dependent variable to identify factors related to caregivers' use of the various types of caregiving technology supports. The significance level for these analyses was set at less than or equal to .05, using a two-tailed test (Li, 2015). The univariate and OLR analysis were performed using the R-Studio version 4.1.3.

Limitations

The cross-sectional nature of the data and aggregation of ethnicities of interest limits the researcher's ability to develop more significant inferences on causality between the independent and dependent variables of interest and negates the opportunity to provide deeper insights into ethno-cultural factors contributing to the caregiver experience.

Results

Table I. Characteristics of Caregivers of Older Adults ($N = 1122$)

Variables	n(%)	Mean	SD
Age		58.19	15.59
Sex			
Female	682(60.78)		
Male	440(39.22)		
Race			
White	687(61.23)		
Asian, Pacific Islander	146(13.01)		
Hispanic	128(11.41)		
Black	113(10.07)		
Other	48(4.28)		
Income			
>$50K annually	341(30.39)		
$50k+ annually	781(69.61)		
Hours spent caregiving			
Up to 20 hours caregiving per week	768(68.45)		
21+ hours caregiving per week	345(31.55)		
Caregiving burden			
Low burden	481(42.87)		
Medium burden	196(17.47)		
High burden	445(39.66)		
Rural status			
Rural	134(11.94)		
Access to Internet at home			
Internet access	1110(98.93)		
Primary caregiver status			
Sole	463(41.27)		
Primary but not sole	232(20.68)		
Someone else is primary	294(26.20)		
Shared equally	133(11.85)		
General youth presence			
Youth in household	278(60.78)		
Partner support			
Current partner support	767(68.36)		
Living Arrangement			
Care recipient lives with caregiver	394(64.88)		
Care recipient does not live with caregiver	728(35.12)		
Number of residents in caregiver's household			
0-4 persons	996(88.77)		
5-8 persons	122(10.87)		
9+ persons	4(0.36)		

Table II. Type of Caregiving Assistance Technology Utilized ($N = 840$)

Type of assistance	n(%)
Utilized any type of caregiving technology assistance	
Yes	840(60.78)
No	702(39.22)
Had virtual or online visit with healthcare provider for recipient	
Yes	47(4.19)
No	1075(95.81)
Created online or shared calendar to organize caregiving schedules or activities	
Yes	109(9.71)
No	1013(90.29)
Tracked recipient's personal health records	
Yes	289(25.76)
No	833(74.24)
Placed online order for groceries or household supplies for recipient	
Yes	216(19.25)
No	906(80.75)
Got or used assistive devices for things like recipients' low vision or hearing problems	
Yes	99(8.82)
No	1023(91.18)
Searched online for support services, aides, facilities, or other help for recipient	
Yes	384(34.22)
No	738(65.78)
Connected with other caregivers online using social media or support groups	
Yes	71(6.33)
No	1051(93.67)
Watched videos to learn how to do different things for recipient	
Yes	181(16.13)
No	941(83.87)
Created electronic lists or spreadsheets to track care activities	
Yes	163(14.52)
No	959(85.47)
Managed recipient's prescription refills or delivery on app or website	
Yes	135(12.03)
No	987(87.97)
Tracked recipient's finances	
Yes	371(33.07)
No	751(66.93)
Used ride service like Lyft or Uber for recipient	
Yes	237(21.12)
No	885(78.88)

Table III. Ordered Logistic Regression: Predicting Caregivers' Use of Caregiving Technologies

Variable	OR [95% CI]
Demographics	
Age	1.00 [0.99, 1.01]
Sex	1.14 [0.85, 1.51]
Race (Asian Pacific Islander)	1.46 (0.94, 2.33)
Economic Resources	
Income	1.60 [1.17, 2.19]**
Rural status	1.01 [0.67, 1.56]
Access to Internet at home	0.80 [0.17, 2.80]
Social Support	
Youth presence	1.52 [1.00, 2.33].
Primary caregiver status	0.97 [0.85, 1.11]
Living Arrangement	1.65 [1.21, 2.27]**
Partner support	1.22 [0.89, 1.67]
Number of residents in caregiver's household	0.52 [0.32, 0.85]**

p<0.10 '.', p<0.05 '*', p<0.01 '**', p<0.001 '***'

Discussion

The technologies this group sought the most were searching online for support services, aides, facilities, or other help for care recipient (34.22%), tracking care recipient's finances (33.07%), and tracking care recipient's personal health records (25.76%). These topics are consistent with the caregivers' information needs reported by other researchers (Kernisan et al., 2010; Kim, 2015; Li, 2015; Washington et al., 2011). Analysis revealed that over 60% of the caregivers included in this study utilized one or more of the fifteen assistive caregiving technologies listed in the survey. This is a reasonable outcome for this sample given the reported economic resources.

Discussion con't

The overwhelming majority of caregivers had access to the internet in their homes (98.93%), effectively eliminating one of the most critical socio-economic barriers to the adoption and utilization of caregiving technologies (Hassan, 2020; Lindeman et al., 2020). This is also relevant to the significant outcome of caregivers with higher incomes having a higher likelihood of utilizing these assistive technologies (OR = 1.60, 95% CI [1.17, 2.19], p<0.01) as their access would be greater based on greater amounts of financial resources as well as knowledge of these technologies. Having more financial resources, lower levels of caregiving burden (42.87%), and part-time weekly provision of care at or less than 20 hours (68.45%), caregivers in this sample may have had more capacity to utilize more non-traditional caregiving information.

The statistically significant results that caregivers who live with their care recipients and caregivers (OR = 1.65, 95% CI [1.21, 2.27], p<0.01) with more individuals in their households (OR = 0.52 [0.32, 0.85], p<0.01) were more likely to utilize assistive technologies supports the body of literature touting the importance of social supports in developing caregiving technology for older adults (Dolničar et al., 2019; Lindeman et al., 2020). Although it did not quite reach statistical significance (OR = 1.52, 95% CI [1.00, 2.33], p<0.10), in approaching statistical significance youth presence in the caregiver household can be inferred to relate to the dynamics of social support in the caregiver relationship with assistive technologies.

Conclusion

With the rapid technology advancement and forms of healthcare access facilitated by the pandemic, the growing number of older adults and their informal caregivers will continue to be expected to use some form of technology in providing care to their recipients (Hassan, 2020). It has been shown that caregivers' use of the technology is influenced by socio-economic as well as caregiving contextual access factors (Li, 2015). In the literature, there are few studies that focus exclusively on youth carers as a dimension of social support for caregivers and provide information on caregivers' use of caregiving assistive technologies. Despite the limitations presented above, the current study findings have important research and practice implications for connecting caregivers to online information resources. The supportive factors incumbent on youth presence in a caregiver's household warrants future more specialized study relative to caregiver utilization of assistive technologies. This research provides a hopeful platform for future studies exploring more facets of intergenerational caregiving and the role of youth caregivers in developing and promoting the use caregiving technologies with older adult recipients.

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Statement of conflicts of interest: In relation to this poster presentation, the researcher declares that there are no conflicts of interest.