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Carer burden: Associations with attachment, self-efficacy, and care-seeking

Daniel Romano[1], Gery C. Karantzas[1], Emma M. Marshall[2], Jeffry A. Simpson[3], Judith A. Feeney[4], Marita P. McCabe[5], Juwon Lee[6], and Ellie R. Mullins[1]

Abstract

Familial caregiving research is yet to examine the factors that underpin the association between attachment insecurity and carer burden. Furthermore, previous research consists largely of data collected at a single point in time. This paper addresses these gaps by reporting on a study involving 57 parent–child dyads to determine whether adult children's caregiving self-efficacy mediates the association between carer attachment insecurity and carer burden. Furthermore, care-recipient care-seeking style was investigated as a moderator of the association between carer's attachment insecurity and their self-efficacy. Carers completed self-report measures of attachment orientations at baseline, caregiving self-efficacy at 3 months, and carer burden at 6 months. At 3 months, dyads also engaged in a video-recorded caregiving discussion task assessing care-recipient's observed care-seeking style. The mediation effects of carer attachment orientations on burden through caregiving self-efficacy were contingent on care-recipient indirect-constructive care-seeking. Findings highlight the complex interplay between carer attachment orientations, caregiving self-efficacy, and care-recipient care-seeking style in predicting the burden experienced by adult children.

Keywords

Attachment orientations, caregiver burden, parent-child dyads, care-seeking, self-efficacy

1Deakin University, Burwood, VIC, Australia
2Deakin University, Geelong, VIC, Australia
3University of Minnesota, Minneapolis, MN, USA
4University of Queensland, St Lucia, QLD, Australia
5Swinburne University of Technology, Hawthorn, VIC, Australia
6Purdue University, West Lafayette, IN, USA

Corresponding author:
Daniel Romano, Deakin University, 221 Burwood Highway, Burwood, VIC 3125, Australia.
Email: daniel.romano@deakin.edu.au

The community care of older adults is increasingly becoming the responsibility of adult children as aged care providers struggle to meet the care demands of a rapidly aging society (Karantzas et al., 2010; Karantzas & Simpson, 2015). However, the care of older adults in the community can impose a toll on adult children in the form of *carer burden,* which is defined as the physical, emotional, financial, and psychological strain of caregiving (e.g., Pinquart & Sörensen, 2011; Zarit et al., 1980). Research into the predictors of carer burden within aging families has suggested that the quality of the relationship between an adult child and their older parent is a critical factor in predicting carer burden (e.g., Merz et al., 2007). The quality of this relationship, although conceptualized in numerous ways (e.g., mutuality and intergenerational solidarity; Archbold et al., 1990; Lyons et al., 2009; Merz et al., 2007), is often investigated from an attachment theory perspective (Bowlby, 1969, 1982). This is because attachment theory provides a lifespan approach to familial relationships with an emphasis on caregiving processes (Bowlby, 1969, 1982; Gillath et al., 2016; Mikulincer & Shaver, 2016).

Research into attachment and carer burden has focused on attachment orientations—individual differences in people's chronic cognitions, affect, and behaviors within close relationships (Gillath et al., 2016; Mikulincer & Shaver, 2016; Simpson & Rholes, 2012). It has been documented that carers with insecure attachment orientations (i.e., high levels of discomfort with closeness and/or a preoccupation with attachment figures) are at greater risk of increased burden (e.g., Crispi et al., 1997; Lee et al., 2018). However, research on this topic has three limitations: (1) research examining the association between attachment orientations and burden all utilize data collected at a single time point, leaving uncertainty as to whether attachment orientations forecast the burden experienced later in time, (2) it has not investigated the possible factors that explain this association, and (3) it typically focuses on the carer with little integration of the care-recipient perspective.

To address these limitations and gaps, we report on a study that investigated caregiving self-efficacy as an explanatory mechanism (i.e., a mediator) of the association between carer attachment orientations and forecasted carer burden, assessed 6 months after the initial assessment of attachment orientations. We focus on caregiving self-efficacy given that insecurely attached individuals hold negative views of themselves that can impact their sense of self-efficacy and competence (Gillath et al., 2016; Mikulincer & Shaver, 2016), as well as their representations of caregiving (Feeney & Collins, 2003). Furthermore, we investigate whether the care-seeking tendencies of older parents (i.e., care-recipients) moderates the association between carer attachment orientations and caregiving self-efficacy. We focus on care-seeking tendencies because the manner in which care is sought provides signals to the carer regarding the care-recipient's needs and the ways in which these needs can be effectively met (Barbee & Cunningham, 1995; Barbee, Cunningham, Winstead, & Derlega, 1993).

Familial caregiving in later life: A behavioral systems perspective

According to theory and research, familial caregiving is governed by the interplay between two complementary behavioral systems–the attachment system and the caregiving

system (Karantzas & Simpson, 2015). The attachment system is activated when an individual experiences threat or distress, after which the person is usually motivated to seek out a 'stronger and wiser other' (i.e., an attachment figure) to help alleviate the distress (Bowlby, 1969, 1982; Mikulincer & Shaver, 2016). The attachment system is then deactivated when the threatening or distressing experience is resolved. In contrast, the caregiving system is activated when an attachment figure notices the distress of a close other, upon which the attachment figure is typically motivated to provide care and support to alleviate the care-recipient's distress. The caregiving system is then deactivated once the care-recipient is no longer in a state of distress (Canterberry & Gillath, 2012; George & Solomon, 1999).

Karantzas and Simpson (2015) contend that later in life, when adult children assume the responsibility of caring for an older parent, the attachment and caregiving behavioral systems may be activated concurrently. This is because the ailing health of an older parent presumably threatens the continuation of the parent-child attachment bond, thereby activating the attachment system in the adult child. In addition, an adult child who notices that a parent is in distress or needs major assistance should experience activation of their own caregiving system, which induces the provision of help (Cicirelli, 1993, 1998; Mikulincer & Shaver, 2016).

Attachment orientations: Implications for carer burden and carer self-efficacy

According to attachment theory, prior experiences within close relationships facilitate the development of attachment orientations across the lifespan (Gillath et al., 2016; Mikulincer & Shaver, 2016; Simpson & Rholes, 2012). Specifically, evidence suggests that prior experiences of inconsistent or inept caregiving tend to result in an anxious attachment orientation (e.g., Ainsworth et al., 1978; Pastor, 1981; Susman-Stillman et al., 1996). Individuals high in attachment anxiety are characterized by an excessive need for approval and closeness as well as difficulties in de-escalating distress. This is primarily due to their use of hyperactivating strategies—distress-regulation strategies that lead to the intensification of distress (Mikulincer & Shaver, 2016). Furthermore, individuals high in attahment anxiety tend to harbor negative views of themselves and their abilities in the context of close relationships (Bowlby, 1973; Gillath et al., 2016).

In terms of the association between attachment anxiety and carer burden, studies have found that higher levels of attachment anxiety in carers are generally associated with higher levels of carer burden (e.g., Karantzas et al., 2019; Karantzas et al., 2010; Lee et al., 2018). It has been suggested that this association is largely due to the hyperactivating strategies typically used by anxiously attached individuals when facing stressful situations but also reflects their negative self-views regarding their skills and abilities in this domain (e.g., Lee et al., 2018). Specifically, highly anxious individuals tend to perceive themselves as lacking competence and self-efficacy and as being highly dependent on others (e.g., Strodl & Noller, 2003; Cassidy et al., 2004). Moreover, their caregiving mental representations entail self-appraisals of ineptness and a lack of skills needed to render effective care and problem-solve caregiving challenges (Feeney & Collins, 2003;

Feeney & Hohaus, 2001). These negative self-evaluations mean that adult children who are high on attachment anxiety should experience lower caregiving self-efficacy when rendering help to an older parent. If so, caregiving self-efficacy should be a key mediator of the association between attachment anxiety and carer burden.

In contrast to attachment anxiety, research finds that prior experiences of having received neglectful or rejecting care tend to result in an avoidant attachment orientation (e.g., Ainsworth et al., 1978; Matas et al., 1978; Susman-Stillman et al., 1996). Individuals high in attachment avoidance are characterized by a discomfort with interpersonal closeness, chronic distrust of others, excessive self-reliance, and the suppression of distress with deactivating strategies designed to inhibit distress. Furthermore, individuals high in attachment avoidance harbor negative views of themselves while outwardly projecting high levels of competence and achievement (Gillath et al., 2016). This contrast between negative self-perceptions and positive outward expressions of the self reflects defensive self-enhancement–a strategy to prop-up one's self image in order to downplay or deny failures and vulnerabilities, and any need to rely on close relationships (Mikulincer & Shaver, 2016).

The research investigating the association between attachment avoidance and carer burden has produced mixed findings. Some investigations have found positive associations (e.g., Crispi et al., 1997; Karantzas et al., 2010), whereas others have found no associations (e.g., Cooper et al., 2008; Markiewicz et al., 1997). These inconsistent findings call for the need to consider explanatory variables such as caregiving self-efficacy. Reviews of self-report and interview-based studies on attachment and caregiving in familial and romantic relationships indicate that highly avoidant individuals lack explicit knowledge of how to render sensitive and responsive care (Gillath et al., 2016; Karantzas et al., 2014; Mikulincer & Shaver, 2016). As a case in point, Feeney and Collins (2003) found that attachment avoidance was associated with perceiving oneself as lacking the skills and resources necessary to provide care to their romantic partners. Thus, even though highly avoidant individuals often project competence and efficacy outwardly, their private self-assessments suggest a lack of efficacy, especially within the context of close relationships (Bartholomew & Horowitz, 1991; Gentzler & Kerns, 2004; Griffin & Bartholomew, 1994). In this respect, adult children who are high on attachment avoidance (much like adult children high on attachment anxiety) should experience lower caregiving self-efficacy when attempting to help their older parents. Past inconsistencies between attachment avoidance and carer burden, therefore, might be explained by their degree of caregiving self-efficacy.

The role of the older parent: Care-seeking behavior

Caregiving and care-seeking are best understood by taking into account the perspectives of both the carer and the care-recipient, (Karantzas et al., 2010; Morris, 1995; Roberto et al., 2001). Despite the importance placed on considering both members of the caregiving dyad, studies on burden which focus on both carers *and* care-recipients all make use of data collected at a single point in time. The caregiving literature suggests that the way in which a care-recipient seeks care has implications for the carer's behavioral

response to the care-recipient, and for how effective the care-recipient perceives the carer's support to be (e.g., Barbee & Cunningham, 1995; Barbee et al., 1993; Iida et al., 2008). Drawing on various lines of research that have examined romantic relationships (e.g., Barbee et al., 1993; Collins & Feeney, 2000; Feeney & Karantzas et al., 2017; Overall & McNulty, 2017), familial aged care (e.g., Cicirelli, 1993; Karantzas et al., 2010), and communication (e.g., Sillars et al., 2004; Sillars et al., 2002), two broad dimensions have repeatedly emerged as an organizing framework for conceptualizing the manner in which care is sought. The first dimension is *directness*, which reflects the extent to which care is sought in a way that is explicit, clear, and overt (i.e., direct) versus passive, unclear, and covert (i.e., indirect) (e.g., Barbee & Cunningham, 1995; Barbee et al., 1993; Collins & Feeney, 2000; Overall & McNulty, 2017). The second dimension is *constructiveness*, which reflects the extent to which care is sought in a way that is collaborative, solution-focused and conveying positive regard towards the carer (i.e., constructive) versus uncooperative, non-solution-focused care seeking, and can also convey criticism, contempt, and disregard for the carer (i.e., destructive) (e.g., Feeney & Karantzas, 2017; Sillars et al., 2002).

Linear combinations of these dimensions yield four distinct styles of care-seeking. Care-recipients who engage in *direct-constructive care-seeking* request help in a co-operative manner by making explicit, clear requests for assistance that maintain regard for the carer and are devoid of negative judgments. Care-recipients who engage in *direct-destructive care-seeking* do so in a manner that is clear and explicit, but uncooperative and lacking regard for the carer. Care-recipients who engage in *indirect-constructive care-seeking* solicit help in a manner that is cooperative and non-judgmental, but lacks clarity regarding what the care-recipient requires. Care-recipients with an *indirect-destructive care-seeking* style solicit help in an uncooperative manner that lacks regard for the carer and is unclear about what is needed.

Direct-constructive care-seeking by care-recipients should provide insecurely attached carers with some direction or guidance by providing them with a clearer understanding of what to do and how to enact caregiving in response to the care-recipient's specific needs. This type of care-seeking should increase knowledge and feelings of effectiveness, especially among carers who are insecurely attached. As a result, direct-constructive care-seeking might enhance self-efficacy in insecure carers. In turn, bolstering insecure carers' caregiving self-efficacy through direct-constructive care-seeking could forecast decreases in feelings of care burden, as carers experience less strain and effort in both ascertaining the care-recipient's needs and carrying out daily caregiving tasks effectively. However, care-seeking characterized by indirect and/or destructive solicitations of help should reduce insecure carers' fragile self-efficacy. Specifically, indirect care-seeking, whether constructive or destructive, is likely to amplify insecure carers' ambivalence regarding their caregiving abilities, doing little to alert the carer to the care-recipient's immediate needs and the potential actions that could meet those needs.

Destructive care-seeking, whether direct or indirect, is characterized by an overlay of negativity and criticism of the carer. For insecure carers who hold negative self-views (Bowlby, 1973; Brennan et al., 1998), the negative sentiment conveyed should further undermine carers' efficacy and discourage their caregiving efforts. Moreover, destructive

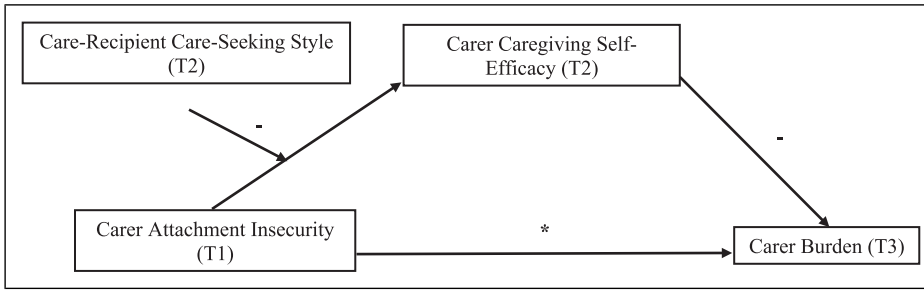

Figure 1. Proposed moderated-mediation model of carer attachment and carer burden. *Note:* (+) represents a positive hypothesized direction; (−) represents a negative hypothesized direction.

and negative dyadic interactions promote further conflict (Feeney & Woodhouse, 2016); this usually mitigates sensitive and responsive caregiving, as support providers focus on dealing with the hurt and invalidation experienced from the care-recipient (Julien et al., 2003). In particular, care-seeking that is both negative and indirect may be the most challenging to an insecure carer's self-efficacy because it not only conveys a lack of regard for the carer (and reinforces a negative model of self), but also fails to clarify the care-recipient's needs. Thus, indirect and/or destructive care-seeking should challenge insecure carers' efficacy, predicting greater carer burden.

The current study

The current study examines carer burden from an attachment theory perspective to address the lack of work on attachment and carer burden. This includes the dearth of research designed to forecast carer wellbeing as well as the lack of research integrating both carer and care-recipient experiences. In doing so, a moderated-mediation model is developed and tested to examine the role of attachment orientations in forecasting carer burden. In particular, the model tests whether caregiving self-efficacy assessed at 3 months mediates the relationship between attachment insecurity (assessed at baseline) and carer burden (assessed at 6 months). The model also tests whether mediation is contingent on the care-seeking style of the older parent (assessed at 3 months; see Figure 1).

Given this model, a series of hypotheses were derived. Specifically, we predicted that caregiving self-efficacy would mediate the association between carers' attachment orientations and carer burden. In particular, carer attachment anxiety and avoidance should be negatively associated with caregiving self-efficacy and, in turn, caregiving self-efficacy should be negatively associated with carer burden (**Hypothesis 1**). We also hypothesized that the care-seeking behavior of care-recipients would moderate the association between attachment orientations and caregiving self-efficacy. Specifically, insecurely attached carers (i.e., those scoring higher on attachment anxiety and/or avoidance) should report higher caregiving self-efficacy when their parent engages in more direct-constructive care-seeking, which should predict lower carer burden (measured at 6 months post attachment insecurity) (**Hypothesis 2**). Conversely, caregiving

self-efficacy should be lower for insecurely attached carers when their older parent engages in more direct-destructive care-seeking or more indirect care-seeking of either kind, which should forecast increases in carer burden (**Hypothesis 3**).

Method

Participants

The sample consisted of 57 dyads comprising adult children who were providing care to their older parents. Dyads were recruited from metropolitan Melbourne ($N = 51$) and rural ($N = 6$) Victoria, Australia. Eligible adult children carers were required to be over 18 years of age and providing care at least once a week to their older parent who was living in the community. Eligible older parents (i.e., care-recipients) were required to be over 60 years of age, residing in the community (i.e., not in an aged care facility), and without moderate or severe cognitive impairment. Dyad members were required to be fluent in reading and speaking English. Adult children were aged between 24–66 years ($M = 51.85$, $SD = 10.16$; 15 men, 42 women), and older parents were aged between 64–98 years ($M = 80.86$, $SD = 7.66$; 16 men, 41 women). In terms of cultural background, 56% of dyads were Australian, 23% were Northern/Western European, 15% were Southern/Eastern European, 4% were South African, and 2% were New Zealander, Canadian, Northern/Eastern Asian, and Southern/Eastern Asian, respectively. Adult children provided care to their parent for an average of 6.48 years and were currently providing care to their older parent for an average of 2.13 days per week. Most participants were within the medium-highest socioeconomic quartile (63.16%), followed by the medium-lowest socioeconomic quartile (35.09%). All remaining participants were within the highest (0.88%) and lowest (0.88%) socioeconomic quartiles, respectively.

Materials and Procedure

The study received ethics approval from the Deakin University Human Research Ethics Committee. The study (including hypotheses) was pre-registered on the Open Science Framework website (see https://osf.io/rbyms/?view_only=92be7dbfc3aa4e38aaba9dbf85e8ba35).[1]

Participants were recruited through posts and advertisements in electronic newsletters of aged care advocacy groups (e.g., Carers Victoria), social media posts and online advertisements (e.g., Facebook), and presentations about the study at retirement villages and aged care exhibitions. The online advertisements and posts provided a link to the study's website and the contact phone number and email address of the research team, which allowed potential participants to express their interest in participating in the study.

The recruitment process differed depending on whether the adult child or older parent contacted the research team. If an adult child contacted the research team (either through the website expression of interest form, phone, or email), a member of the research team provided further information about the study, either immediately or with a follow-up phone call, to determine whether the adult child and their older parent met the eligibility

criteria. Given that the study required older parents to not have moderate or severe cognitive impairment, the screening call also involved administering the Short Informant Questionnaire on Cognitive Decline in the Elderly (IQCODE; Jorm, 1994) to the adult child to assess the older parent's cognitive abilities.[2] Any dyads in which the parent had a score above 3.6 were excluded from the study.[3] When the older parent contacted the research team to express interest in participating in the study, the screening call was identical to the call with the adult child, except that it did not include the assessment of cognitive impairment. In these cases, the adult child was subsequently contacted by phone and administered the Short IQCODE.

Following recruitment, at baseline (T1), the Plain Language Statement, consent forms, and measure of attachment orientations were either mailed to the adult child's postal address or emailed with a link to an online version of the survey.[4] The Adult Familial Attachment Scale (AFAS; Karantzas et al., 2017) assessed the adult children's level of attachment anxiety and avoidance. The AFAS was administered instead of past familial measures or adapted measures of romantic attachment to address two major problems associated with the assessment of later-life attachment. First, past familial measures often conflate individual differences in attachment with related but distinct concepts, such as affection, intergenerational solidarity, and relationship closeness (Karantzas & Simpson, 2015). Second, the adaptation of romantic attachment measures does not translate into valid assessments of familial attachment in later life (see Bradley & Cafferty, 2001; Karantzas & Simpson, 2015).

The AFAS consists of 25 items such as: "I prefer to depend on myself rather than on my parent/child" for attachment avoidance, and "My parent is often reluctant to get as close as I would like" for attachment anxiety. Each item is rated on a 7-point Likert-type scale, ranging from 1 (*strongly disagree*) to 7 (*strongly agree*). The items are divided into two subscales: attachment anxiety (α = .79), and avoidance (α = .89).[5] Scores are averaged for each dimension, with higher scores indicating higher levels of attachment anxiety or avoidance. Adult children were instructed to complete the survey independently (i.e., not in consultation with their older parent). If they completed a paper copy of the survey, adult children were asked to mail back the survey and consent form to the research team using the reply-paid envelope that was provided. If they completed the survey online, adult children's responses and consent were immediately recorded on a secure online server.

At 3 months follow-up (T2), adult children were mailed a modified version of The Self-Efficacy Scale (Sherer et al., 1982) and instructed to complete the measure independently of their parent. The measure contained only the "general self-efficacy" subscale, and the items were modified to assess caregiving performed by an adult child for an older parent. The modified scale had 8 items such as: "I am confident that I can care for my parent as well as I should". The items were rated on a 7-point Likert-type scale ranging from 1 (*strongly disagree*) to 7 (*strongly agree)*. The modified version of the scale had high reliability (α = .91). Thus, scores on the scale were averaged, with higher scores indicating greater caregiving self-efficacy. This measure had to be completed within 3 days prior to the subsequent in-home discussion task, during which the care-seeking behavior of the older parent was video-recorded.[6]

Two researchers then went to the home of either the adult child or older parent (both dyad members were present) to administer and video-record them engaging in a discussion task on familial caregiving. Prior to the discussion task, the researchers collected the adult child's completed caregiving self-efficacy questionnaire. Adult children and older parents were then given instructions regarding the in-home assessment, and two video cameras were set up to record the dyad's caregiving discussion. The cameras were positioned to record the face and torso of both dyad members, which is necessary to capture non-verbal facial and body language in addition to verbal behavior.

Both dyad members then engaged in a five-minute discussion regarding the *major challenge* that the older parent experienced with regard to needing or receiving care. To prompt the older parent to identify this challenge, they were asked to list and discuss "The hardest thing about needing or getting help from one's adult child." To ensure the participants' privacy during the discussion, the researchers left the room. The prompt and structure of this discussion task is similar to support-seeking tasks commonly used in interpersonal research (e.g., Collins & Feeney, 2000; Cutrona & Suhr, 1992; Simpson et al., 1996).

Following the in-home discussion task, the video-recorded discussions were reviewed by two trained, independent coders, who assessed the older parent's care-seeking style using the Care-Seeking Styles Behavioral Coding Scheme (Romano et al., 2019). Coders independently watched each dyad's care-seeking discussion and rated the extent to which the older parent displayed verbal and nonverbal direct-constructive (ICC = .86), direct-destructive (ICC = .93), indirect-constructive (ICC = .86), and indirect-destructive (ICC = .84) care-seeking behaviors. Scores for each of the four care-seeking styles were based on the frequency and intensity of the verbal and non-verbal behaviors witnessed and rated on a 7-point scale ranging from 1 (*low*) to 7 (*high*).

Finally, 6 months after baseline (T3), adult children were mailed the self-report version of the Zarit Burden Interview (Zarit et al., 1980). They completed this scale independently and returned it via post to the research team. The measure has 22 items, including: "Do you feel stressed between caring for your parent and trying to meet other responsibilities for your family or work?" The items were rated on a 5-point scale ranging from 0 (*never*) to 4 (*nearly always*). Items were summed, with higher scores indicating greater carer burden (α = .93).[7]

Data Analysis

The data were analyzed using the PROCESS version 3.4 (Hayes, 2017). Moderated-mediation analyses were conducted to determine: (a) whether caregiving self-efficacy mediated the association between carer attachment orientation and carer burden, and (b) whether the relationship between carer attachment orientation and carer self-efficacy was moderated by the older parent's care-seeking behavior. Specifically, eight moderated-mediation analyses (PROCESS: Model 7) were conducted in which the indirect effects were derived by bootstrapping the sample to 5000 replications and estimating the 95% bias-corrected confidence intervals (MacKinnon, 2008; Preacher & Hayes, 2008). In all analyses, caregiving self-efficacy at the 3-month follow-up (T2) was the mediating

variable (*M*) between carer attachment at baseline (i.e., [T1] the independent variable [*X*]), and carer burden at the 6-month follow-up ([T3] the outcome variable [*Y*]).The first four of the eight moderated-mediation models tested included carer attachment *anxiety* as the predictor (*X*). These four models however differed in terms of the moderator (*W*) of the association between attachment anxiety (T1) and carer self-efficacy (T2). Specifically, each model included one of the four observed parental care-seeking styles assessed as part of the in-home discussion task at T2 (i.e., direct-constructive [model 1], direct-destructive [model 2], indirect-constructive [model 3], and indirect-destructive [model 4]). The second four models (5–8) were identical to the first four, with the exception that models 5 to 8 included attachment *avoidance* at T1 as the predictor, rather than attachment anxiety.[8]

To determine whether the mediating effect of caregiving self-efficacy was contingent on the care-seeking styles exhibited by the older parent, conditional indirect effects were estimated. In order to visualize the nature of any significant conditional indirect effects, the indirect effects of attachment insecurity on carer burden through caregiving self-efficacy were plotted at high (1 *SD* above the mean) and low (1 *SD* below the mean) levels of parent care-seeking styles.

The models described above were run with and without controlling for carer burden measured at baseline (i.e., T1). The relative fit of two models (i.e., the model controlling for burden at baseline vs the model without this control variable) was compared by way of the Akaike information criterion (AIC) to determine whether the model with or without baseline burden provided a better fit to the data.

In addition, a series of supplementary analyses were conducted in which eight alternative moderated-mediation models were tested. These analyses were conducted to test the possibility that parental care-seeking styles may also moderate the non-hypothesized path between caregiving self-efficacy (*M*) and carer burden (*Y*). As with the primary analyses, four models included attachment anxiety as the predictor variable and another set of four models included attachment avoidance as the predictor (estimated using PROCESS: Model 14).

Given that our analyses centered on the testing of mediation effects, apriori power analysis for all models was based on Fritz and MacKinnon's (2007) guidelines regarding the effect size and sample size requirements to detect an indirect effect at a power of .80. According to this approach, the sample size needed to achieve a power of .80 is determined by evaluating the magnitude of estimates of the paths comprising the indirect effect (e.g., the predictor to the mediator and the mediator to the outcome) as it relates to Cohen's (1988) criteria for small, medium, and large effect sizes, respectively.

Results

The means and *SD*s of the study variables are reported in Table 1 and the correlations between these variables are presented in Table 2. Adult children reported low-to-moderate scores on attachment anxiety and avoidance at baseline, moderate-to-high scores on caregiving self-efficacy at 3-month follow-up (T2), and relatively low levels of carer burden at 6-month follow-up (T3). Older parents reported low levels of the four care-seeking styles at 3-month follow-up.

Table 1. Descriptive Statistics of Independent and Dependent Variables for Carers (Adult Children) and Care-Recipients (Older Parents).

Variable	*M*	*SD*	Scale range
Carer Att. anxiety (T1)	2.22	1.04	1–7
Carer Att. avoidance (T1)	3.03	1.09	1–7
Carer caregiving self-efficacy (T2)	45.63	8.16	1–56
Carer burden (T3)	19.30	14.51	0–88
CR direct-constructive (T2)	2.00	0.97	1–7
CR direct-destructive (T2)	1.32	0.88	1–7
CR indirect-constructive (T2)	1.85	0.75	1–7
CR indirect-destructive (T2)	1.87	0.80	1–7

Note: Att. = attachment, CR = care-recipient.

Missing value analyses revealed that a maximum of 1.9% of data were missing for any given variable in the dataset, and a maximum of 15% of data were missing across time-points for any case. Using Little's test, the data were found to be missing completely at random ($\chi^2(12)=12.63$, $p=.40$). Therefore, missing data were replaced using multiple imputation (Rubin, 1976, 1987).

As an initial stage, we ran the proposed moderated-mediation models with and without controlling for carer burden measured at baseline (i.e., T1). Comparison of the AIC for the models which included carer burden at baseline demonstrated poorer fit than the models which did not include baseline carer burden as a control variable (*mean* $\Delta AIC = 15.43$). Additionally, the significance of the effects in each model did not change when controlling for baseline carer burden. Given this, care burden at baseline was not included as a statistical control. As shown by the unstandardized regression coefficients presented in Table 3, there was a significant, positive association between anxiety and avoidance at T1 and carer burden at T3. Carer anxiety and avoidance were not significantly associated with caregiving self-efficacy at 3-month follow-up (T2), but there was a significant, negative association between caregiving self-efficacy and carer burden at T3.

Eight moderated-mediation analyses were conducted in which parental care-seeking was modeled as a moderator of the indirect association between attachment orientation and carer burden with caregiving self-efficacy as the mediator. In all models, parental care-seeking was specified to moderate the association between attachment orientations (i.e., attachment anxiety or attachment avoidance) and carer self-efficacy. Two models demonstrated significant conditional indirect effects, and thus evidence for moderated-mediation. As shown in Table 3, both significant conditional indirect effects pertained to indirect-constructive care-seeking as the moderator. However, one conditional indirect effect included attachment anxiety as the predictor variable, and the other conditional indirect effect included attachment avoidance as the predictor (see Table 3).

To determine the nature of the significant conditional indirect effects detailed above, simple slopes tests were plotted. As shown in Figure 2 panel (a), the indirect effect

Table 2. Correlations of Independent and Dependent Variables for Carers (Adult Children) and Care-Recipient (Older Parents).

Variable	Carer Att. anxiety (T1)	Carer Att. avoidance (T1)	Caregiving self-efficacy (T2)	CR direct-constructive (T2)	CR direct-destructive (T2)	CR indirect-constructive (T2)	CR indirect-destructive (T2)	Carer burden (T3)
Carer Att. anxiety (T1)	1							
Carer Att. avoidance (T1)	.54**	1						
Carer caregiving self-efficacy (T2)	−.29*	−.34**	1					
CR direct-constructive (T2)	−.00	.04	.32	1				
CR direct-destructive (T2)	.23	.23	−.09	.04	1			
CR indirect-constructive (T2)	−.11	−.08	−.15	.05	−.14	1		
CR indirect-destructive (T2)	.11	.10	−.05	−.21	−.04	−.05	1	
Carer burden (T3)	.49**	.56**	−.41**	−.08	−.14	−.03	−.04	1

Note: *$p < .05$; **$p < .01$, Att. = attachment, CR = care-recipient.

Table 3. Regression Coefficients for Study Variables and Mean-Level Conditional Indirect Effects of Attachment on Carer Burden by Care-Seeking Style.

Independent variable	Moderator	*a* (X→M) *b* (*SE*)	*b* (M→Y) *b* (*SE*)	*c* (X→Y) *b* (*SE*)	*C′* (conditional indirect effect)	SE	LB 95% CI	UB 95% CI
Carer attachment anxiety	Indirect-constructive	1.40 (2.13)	−.51 (.21)	5.71** (1.65)	1.23*	.81	.04	3.41
	Indirect-destructive	−2.63 (2.51)	−.51 (.21)	5.71** (1.65)	1.26	1.24	−.35	4.83
	Direct-constructive	1.84 (2.76)	−.51 (.21)	5.71** (1.65)	1.30	.94	−.04	3.74
	Direct-destructive	−2.82 (1.69)	−.51 (.21)	5.71** (1.64)	1.15	.96	−.06	3.90
Carer attachment avoidance	Indirect-constructive	.82 (2.45)	−.43 (.20)	6.41*** (1.53)	1.13*	.80	.01	3.09
	Indirect-destructive	−2.70 (2.36)	−.43 (.20)	6.41*** (1.53)	1.09	.84	−.07	3.24
	Direct-constructive	−.35 (2.53)	−.43 (.20)	6.41*** (1.53)	1.18	.89	−.13	3.31
	Direct-destructive	−.76 (2.04)	−.43 (.20)	6.41*** (1.53)	1.18	.89	−.07	3.43

Note. * = $p < .05$, ** = $p < .01$, *** = $p < .001$, LB = lower bound, UB = upper bound; estimates are reported as unstandardized regression coefficients.

involving carer attachment anxiety → carer self-efficacy → carer burden was significant when care-recipients' indirect-constructive care-seeking was high (1 *SD* above the mean), compared to when care-recipients indirect-constructive care-seeking was low (1 *SD* below the mean). That is, highly anxious carers, experienced greater reductions in carer self-efficacy, and in turn, greater increases in burden when care-recipients engaged in high levels of observed indirect-constructive care-seeking behavior. Figure 2 panel (b) similarly illustrates that the indirect effect involving carer attachment avoidance → carer self-efficacy → carer burden was significant when care-recipients' indirect-constructive care-seeking was high (1 *SD* above the mean), compared to when care-recipients indirect-constructive care-seeking was low (1 *SD* below the mean). That is, much like highly anxious carers, highly avoidant carers experienced greater reductions in carer self-efficacy, and in turn, greater increases in burden when care-recipients engaged in high levels of observed indirect-constructive care-seeking behavior.

Supplementary analyses testing for whether care-recipient care-seeking style moderated the non-hypothesized the path between caregiving self-efficacy (*M*) and carer burden (*Y*) demonstrated no significant conditional indirect effects across any of the eight alternative models (see Supplement S1).

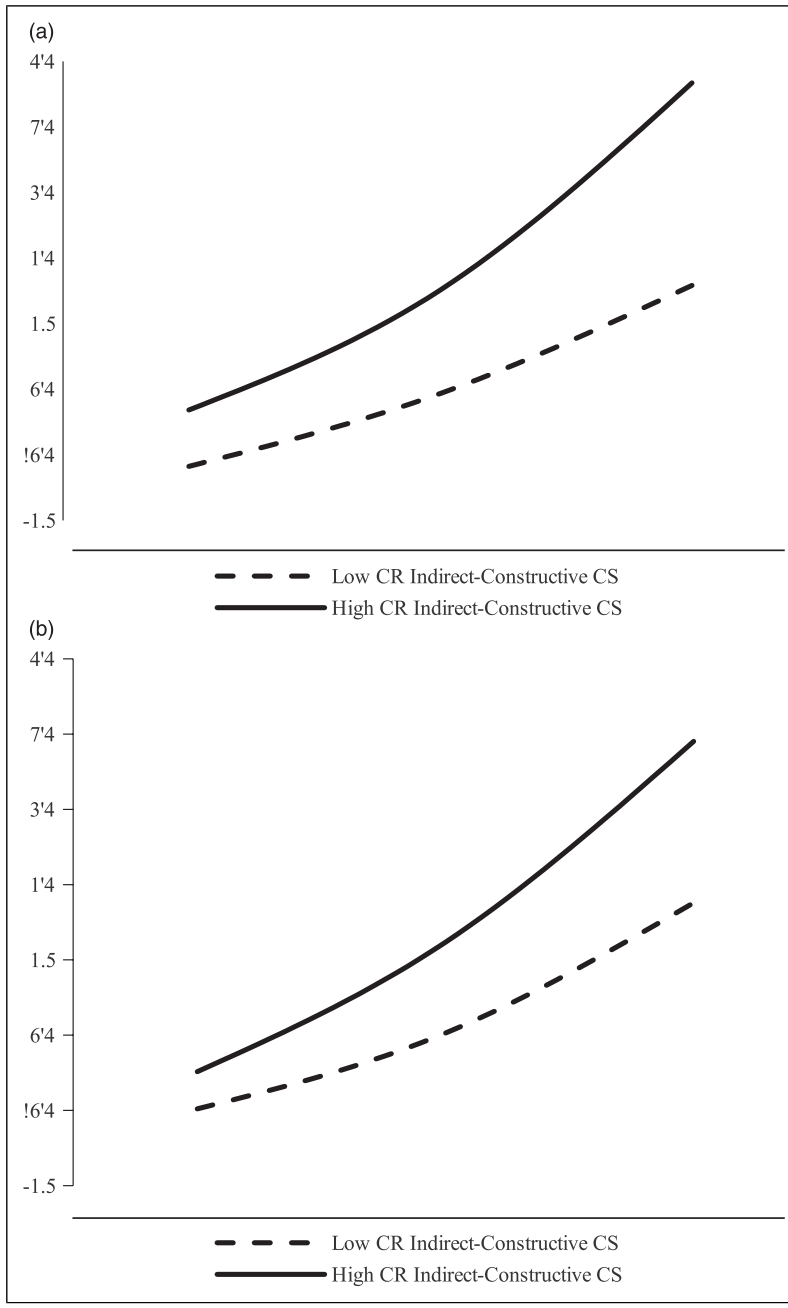

Figure 2. Significant conditional indirect effects between carer attachment orientations and care-recipient indirect-constructive care-seeking style. Note: CR = care-recipient, CS = care-seeking.

Discussion

This novel study tested a moderated-mediation model to determine whether adult children's caregiving self-efficacy mediated the association between carers' attachment insecurity and their carer burden measured 6 months later. It also examined whether this mediation was contingent on the observer-rated care-seeking behavior of care-recipients (i.e., older parents), with individual differences in care-seeking behavior (i.e., care-seeking style) potentially moderating the link between carers' attachment insecurity and their sense of self-efficacy. This study is novel as it expands on the dearth of research focusing on care-seeking styles. In particular, this study is one of the few that has examined carer and care-recipient factors concurrently to better understand the role of care-seeking. Moreover, it is the first study to employ behavioral assessments of care-seeking styles within older families.

Our findings suggest that caregiving self-efficacy alone does not mediate the association between carer's attachment orientations and forecasted assessments of burden (showing no support for **hypothesis 1**). Rather, the mediating role of caregiving self-efficacy is partly dependent on the care-seeking style of the care-recipient. Although direct-constructive care-seeking was not found to moderate the mediated effect of caregiving self-efficacy (providing no support for **hypothesis 2**), we found that care-recipients' indirect-constructive care-seeking style moderated the mediated association between carers' attachment orientations, their caregiving self-efficacy (assessed 3 months later), and their carer burden (assessed 6 months later; partial support for **hypothesis 3**). Indirect-constructive care-seeking had largely similar effects on the self-efficacy of highly anxious and highly avoidant carers, with higher levels of indirect-constructive care-seeking being associated with lower caregiving self-efficacy. Thus, for both types of insecurely attached carers, care-seeking that is both indirect *and* constructive appears to be especially problematic in terms of carers' sense of self-efficacy.

What might explain these findings? First, seeking care in an indirect manner is likely to provide less information about a care-recipient's needs and the manner that care may be best rendered to meet their needs. In addition, insecure individuals' under-developed mental representations of caregiving and negative self-views regarding competency and skills (Gillath et al., 2016; Karantzas et al., 2014; Mikulincer & Shaver, 2016) means that indirect care-seeking may exacerbate uncertainty and feelings of inefficacy regarding how to support care-recipients in times of need (Collins & Feeney, 2000; Iida et al., 2008).

Second, care-seeking that is also constructive might be confusing or unsettling for insecure carers given that many of their recollections and perceptions of interactions with close others are largely negative (Mikulincer & Shaver, 2016). To complicate matters, the cognitions and behaviors of insecurely attached individuals reflect interpersonal adaptations that involve less sensitivity, responsiveness, and constructive ways of both soliciting and providing care (Gillath et al., 2016; Mikulincer & Shaver, 2016). Indeed, insecurely attached individuals' attentiveness and vigilance to detecting and responding to interpersonal threats by way of either hyperactivating strategies (if high on attachment anxiety) or deactivating strategies (if high on attachment avoidance) means that they often misperceive positive relationship interactions as negative (e.g., Campbell et al., 2005;

Murray et al., 2000). Consequently, insecure carers may find solicitations for help that are indirect but also constructive especially difficult to interpret and respond to appropriately. Not only are insecure carers less likely to have positive memories and experiences to draw on and guide them in terms of how to render effective care in such situations; they may also misread the care-recipient's constructive demeanor as mockery or patronization (Gillath et al., 2016; Mikulincer & Shaver, 2016; Campbell et al., 2005). Thus, indirect-constructive requests for support may merely corroborate the working models of insecurely attached carers, exacerbating their inefficacy.

Apart from indirect-constructive care-seeking, we found that no other care-seeking style had a moderating effect. This is despite our prediction that direct-constructive care-seeking might increase caregiving self-efficacy in insecure carers and that destructive care-seeking (both direct and indirect) would decrease caregiving self-efficacy. Why did these care-seeking patterns not moderate insecure carers' self-efficacy? Although direct-constructive care-seeking ought to provide carers with more specific details as to the nature of needs and how to address them, this form of care-seeking may do little to mitigate the burden that most insecure carers ultimately experience. Attachment insecurity demonstrates moderate stability across time (Fraley, 2002), which is due in part to the stable, largely unconscious, negative mental representations that insecure individuals harbor about themselves (Bowlby, 1969, 1982; Mikulincer & Shaver, 2016). It is likely that the negative self-perceptions of efficacy and competence tied to attachment insecurity are difficult to alter, especially within interpersonal and stressful situations such as caring for an aging, often dependent parent. In this respect, direct-constructive care-seeking may do little to shift chronic negative self-representations of caregiving self-efficacy.

Destructive care-seeking (both direct and indirect) conveys negative sentiment toward the carer. Given that insecurely attached individuals are particularly hypervigilant to interpersonal threats (Simpson & Rholes, 2012), carers who are insecurely attached may focus on the negativity over their self-efficacy when trying to meet their care-recipient's needs. If so, highly insecure carers may become more self-focused on minimizing their own distress following destructive care-seeking behaviors displayed by their aging parent. Studies of caregiving and destructive conflict patterns in romantic relationships have indicated that insecure individuals experience decreased motivation to help close others when others are perceived as "difficult" (Feeney & Collins, 2003). Furthermore, anxiously attached individuals often enact their own destructive patterns that escalate negativity, while avoidant individuals typically withdraw from such interactions altogether (Feeney & Karantzas, 2017). Thus, when older parents engage in destructive care-seeking attempts, the focus and responses of insecure carers may be on regulating their own distress rather than evaluating their competencies about rendering care.

Limitations, future directions, and implications

Although this study has several strengths, it is important to interpret the findings in light of its limitations. First, the adult children in the sample reported relatively low levels of attachment anxiety and avoidance and relatively high levels of caregiving self-efficacy. Second, adult children were engaged in the care of their older parents, most of whom were still largely independent and in relatively good health. Third, our samples of adult children

and their older parents were mostly comprised of women, which may limit the generalizability of these findings to carers and care-recipients who are men. However, given that most prior studies that have examined support processes in romantic relationships typically have not found gender differences in the type or quality of support provided (e.g., Neff & Karney, 2005), we have some faith that the current findings may also extend to men. Nonetheless, in view of the relative dearth of empirical evidence regarding gender differences in care-seeking processes later in life, this remains an important area of future research. Likewise, future research testing our moderated-mediation model should examine carers who have higher levels of attachment insecurity and families in which older parents are even more reliant on their adult children for care. Conducting research within such familial contexts may reveal that different care-seeking styles moderate the connection between carer attachment insecurity, carer self-efficacy, and carer burden. Last, it should be noted that the indirect effects in the significant models were found to be relatively small compared to the total effects. These points should be noted when interpreting the results.

The current findings also have several noteworthy implications for research and practice in familial aged care. For example, they provide new insights into the association between attachment orientations and carer burden. In particular, the current study offers the first evidence on the predictive effects of a carer's attachment insecurity on carer burden several months into the future. We found that this connection is partly explained through the complex interplay between the carer's self-efficacy and the care-recipient's care-seeking behavior. Importantly, we also found that self-efficacy mediates the association between carers' attachment orientations and their burden, but primarily when older parents seek care in an indirect, constructive manner. These findings suggest that screening carers on their attachment orientations may provide aged care service providers with useful insights into carers who are at risk for carer burden.

Furthermore, we found that insecure carers are more likely to experience lower caregiving self-efficacy in caregiving situations where their parents—despite being constructive in soliciting care—do so in indirect ways. Yet our findings also suggest that if care-recipients are more direct in their solicitation of care, these behaviors are unrelated to the self-efficacy of insecure carers. Helping older parents engage in more explicit care-seeking, therefore, may not be a good area for intervention. Rather, bolstering a carer's sense of competence and abilities as a means to mitigate the experience of carer burden in the future may prove to be a better avenue of intervention. Methods of bolstering carer self-efficacy can take the form of psychoeducation about effective and sustainable ways to conduct and manage caregiving responsibilities and how best to coordinate allied health services (López & Crespo, 2008). For carers who are faced with the difficulties of caring for a parent who has more challenging chronic illnesses, such as dementia, specialist knowledge and training for managing the behavioral and psychological symptoms of dementia (e.g., Kolanowski & Hill, 2013; Nogales-Gonzalez et al., 2015) may be critical in enhancing caregiving self-efficacy. This may be especially important for insecurely attached carers who may lack the mental representations for how to render sensitive, responsive care effectively (George & Solomon, 1999; Karantzas & Simpson, 2015; Mikulincer & Shaver, 2016).

Conclusion

This study of carer burden highlights the importance of applying an *interpersonal* perspective to advance our understanding of how familial relationships affect the stress-and-strain experienced by adult children when caring for their aging parents. In doing so, the current study addresses a number of the limitations in past research on carer burden undertaken from an attachment theory perspective. The findings highlight the complex interplay between carer attachment orientations, caregiving self-efficacy, and the care-seeking style of older parents in forecasting the carer burden experienced by adult children. This work paves the way for future research, which needs to explore the complexities of relationship dynamics further in understanding the role of familial relationships in predicting the wellbeing of carers.

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ORCID iDs

Daniel Romano https://orcid.org/0000-0002-4213-9831
Gery C Karantzas https://orcid.org/0000-0002-1503-2991
Jeffry A Simpson https://orcid.org/0000-0003-1899-2493
Juwon Lee https://orcid.org/0000-0003-1880-7614

Supplemental Material

Supplemental material for this article is available online.

Notes

1. In addition to the pre-registration of the hypotheses put forward as part of this study, the pre-registration on the Open Science Framework website also includes the full measures used and the Care-Seeking Behavioral Coding Scheme (see https://osf.io/rbyms/?view_only=92be7dbfc3aa4e38aaba9dbf85e8ba35).
2. The IQCODE has 16 items on which the adult child rates the perceived change in their older parent's cognitive functioning across various cognitive tasks/abilities over the past 10 years. These include abilities such as "Remembering things that have happened recently." All items are scored on a 5-point scale, ranging from 1 (*much improved*) to 5 (*much worse*). Higher scores indicate greater cognitive decline ($\alpha = 0.93–0.97$; Jorm, 1994; Jorm & Jacomb, 1989). Scores on each item are averaged, with higher scores representing greater cognitive decline. A cut-off score of 3.6 indicates mild cognitive decline.
3. Nineteen dyads were excluded from participating in the study because the adult child's report of their older parent's cognitive ability exceeded the cut-off of 3.6 on the Short IQCODE.
4. Four participants completed the T1 survey online. Following this, due to a change in study protocol resulting from numerous requests from participants to complete physical copies of the surveys, the remaining participants were mailed paper surveys to complete.
5. Higher-order confirmatory factor analysis (CFA) of both versions of the measure (Karantzas et al., 2017) produced good fit and an identical two factor higher-order structure (attachment anxiety and avoidance) (adult children: $\chi^2(253) = 443.62$, $p < .001$; comparative fit index (CFI) = .94; standardized root mean square residual (SRMR) = .04; older parents: $\chi^2(253) = 21.67$, $p < .001$; CFI = .92; SRMR = .06).
6. The caregiving self-efficacy questionnaire was completed 3 days prior to the in-home visit to ensure adequate time for thoughts of caregiving stresses that may have been made salient in adult children to pass prior to the in-home visit. This was done so participants' responses and behavior during the in-home visit were not influenced by these thoughts.
7. Carer burden was tested at baseline (T1) but is not hypothesized as primary predictor of carer burden at T3 within this study. However, the assessment was included as a control variable as part of preliminary model testing (see footnote, 9).
8. Although studies in adult attachment typically include both attachment dimensions (i.e., anxiety and avoidance), in analytic models given the sample size and the models being tested, we limited our analyses to the inclusion of a single attachment dimension to ensure analyses were sufficiently powered.

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