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COMMENTARY

Caregiving stress: the interplay between blood pressure and other variables

Family caregiving is the oldest form of care system. Being cared for and caregiving are intrinsic to any close relationship, for instance between wife and husband or parents and children; they are present in all relationships where people try to protect or enhance each other's well-being. Families, not social service agencies, nursing homes, or government programs are the cornerstone in regard to long-term care for older and dependent persons. Most people will become caregivers – or need one – at some point in their lives (Schulz *et al.*, 2020).

In recent decades, the number of older people has increased in many Western countries. The prevalence of people living with dementia (PLWD) increases in relation to age, an increase which has been shown to be exponential. As a consequence of demographic changes, resulting in more older people in the population, the number of dependent older people (with or without dementia) has been increasing. A variety of community care services are available to assist caregivers and care recipients, but most of the dependent elderly population dwell at their own home or at a family home. This happens despite increased geographic separation, greater numbers of women in the workforce, and other changes in family life. Family caregivers are those who routinely help others who are limited by chronic conditions and those who provide most of the assistance for the necessary activities of daily living (ADLs), such as feeding, bathing, dressing, and toileting. Caregivers also improve care recipients' quality of life like pleasure, self-realization, and autonomy (McPherson *et al.*, 2011; Pérez-Rojo *et al.*, 2018). In any case, institutionalization is generally considered a last resort, especially when this possibility is contemplated by spouses (López *et al.*, 2012).

Vara-Garciá *et al.* studied (a) the role of activity restriction in the relationship between stressors (frequency of and reaction to behavioral and psychological symptoms) and frequency of pleasant events and (b) how activity restriction and frequency of pleasant events contribute to the understanding of the association between caregiving stressors and blood pressure (Vara-García *et al.*, 2022). They found that (1) the relationship between caregiving stressors (cognitive status and behavioral and psychological symptoms of dementia) and frequency of pleasant events was indirect, potentially due to the association of these variables with activity restriction and (2) both higher levels of activity restriction and lower frequency of pleasant events are associated with negative caregiving outcomes, in this case, with higher blood pressure. They concluded that behavioral and psychological symptoms of dementia impact caregivers' health by increasing caregivers' activity restriction and decreasing their engagement in pleasant activities.

This commentary aims to use Vara-Garciá *et al.*'s work as an example to discuss the values and limitations of caregiving research and how physical health can complement mental health to reveal the whole picture of the target of caregiving research. The growth of interest in family caregivers has been phenomenal. Before the 1980s, there were only a few caregiving studies (Capistrant, 2016). Now family caregiving studies dominate gerontological meetings and journals all around the world, and it is a topic that appears in global psychological meetings and journals. Despite periodic questioning of the merits and utility of the vast number of publications focused on family caregivers by key scholars in this field, the number of studies of caregiving has not diminished. This interest in caregiving reflects the confluence of social trends that have made caregiving a normative and stressful event in people's lives. Given the essential importance of families in the older adults' care, this interest is, without any doubt, necessary.

Caring for a dependent elder relative (with or without dementia) implies a continuously increasing responsibility for the caregiver and dependence for the care recipient. Relatives who assume the role of primary caregiver are often highly distressed by the wide range of tasks and services that they have to provide for the patient. Everyone has negative feelings that come and go over time, but when these feelings become more intense and leave caregivers totally drained of energy, crying frequently or easily angered by their loved one or other people, it may well be a warning sign of clinical problems.

Providing care for an older relative or a PLWD can bring out the best (Carbonneau *et al.*, 2010) and the worst (Crespo *et al.*, 2005; Pinquart and

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Sörensen, 2003). Ideally, the experience of caregiving is a time to come together and provide mutual support to one another. Nevertheless, as a stressful transition, this experience can also lead to strained connections and painful conflict. Caregiving is a tangible expression of the links of love and obligation, but family caregiving can also devastate caregivers' life (Adelman *et al.*, 2014).

Past research has clearly documented the negative consequences of caregiving, both in caregivers' physical and psychological well-being. Most research shows that caregivers showed higher levels of cortisol and blood pressure, greater risk of developing hypertension than those who are not caregivers; their immune response is reduced (Capistrant, 2016; Vitaliano *et al.*, 2003); and they feel, on many occasions, overcome by the burden of the care, as well as by depression, or anxiety (Adelman *et al.* 2014; Pinquart and Sörensen, 2003; Schulz *et al.*, 2020). Therefore, for most cases of dependency among older adults, at least two individuals are affected: the dependent older adult and the caregiver.

Research on caregiving has frequently used the Lazarus and Folkman (1984) stress model as a framework for investigating the caregiving process. Knight and Sayegh (2010), Lawton *et al.* (1991), and Pearlin *et al.* (1990) developed particularly helpful and extensively used stress process models of caregiving that propose a series of interrelated conditions, including primary stressors (related to patient illness characteristics and caregiving tasks), the caregiver's subjective appraisal, personal resources that could act as mediator factors (namely, social support and coping strategies), and the outcome or consequences of this process (i.e., physical and mental health impact). From this perspective, primary stressors, such as the cognitive and behavioral problems, create the conditions under which health impact may occur, but the extent to which caregivers experience physical problems depends on their personal characteristics (e.g., appraisal style), and the resources they may have to assist in managing stressors. In other words, the type of stressors may matter less than how caregivers react to them and the resources they have to modulate their impact.

Vara-Garciá *et al.*'s study is cross sectional and focused on dementia caregivers. Caregivers of PLWD have been found to suffer poorer emotional and physical status than other caregivers associated with higher patients' behavioral symptoms and cognitive impairment (Capistrant, 2016; Pinquart and Sörensen, 2003; Schulz *et al.*, 2020). Nevertheless, this evidence comes overwhelmingly from studies with a lot of sample heterogeneity (e.g. some studies include only spouses, while others include siblings or a combination of the two). The existing caregiving literature is largely cross sectional, with longitudinal information coming from nonpopulation-based samples (Vitaliano *et al.*, 2003, Capistrant, 2016). Moreover, some studies do not show evidence that caregivers of PLWD had increased levels of emotional distress compared to those assisting a dependent relative without cognitive impairment (Crespo *et al.*, 2005). These results suggest that the nature of the older person's illness (dementia or nondementia) may not be as important for the caregivers' emotional state as their appraisals and resources (namely social support and coping) for managing care-related problems.

The study by Vara-Garciá *et al.* showed that a poor health indicator such as higher blood pressure was associated with higher levels of activity restriction and lower frequency of pleasant events in caregivers of PLWD. Increased caregivers' activity restriction and decreased pleasant activities are common in caregiving. The findings confirm existing evidence on a relationship between coping and blood pressure and emphasize the importance of closely monitoring caregivers coping strategies (the restriction of normal or pleasurable activities). There is, however, a debate on whether adaptation or proliferation of stress occurs in long-term caregivers. In the stress adaptation process, caregiver resources (social support and coping) play a key role in preventing or buffering the impact of family stressors on specific stress outcomes. In the stress proliferation process, stressors tend to create additional stressors; the challenging behavioral and psychological symptoms of PLWD have the potential to severely disrupt caregiver relationships and roles in a variety of areas, thereby leading to blood pressure and other problematic outcomes.

Previous studies show that caregivers' activity restriction is associated with poor health indicators. These associations are likely dynamic and bidirectional, as evidenced by the reciprocal links between care-related activity restriction and increased risk of detrimental outcomes over time (Mausbach *et al.*, 2011; Smith *et al.*, 2011). Activity restriction may also have reverberating adverse consequences for social support, and this variable is a key component of the overall stress and coping model (Knight and Sayegh, 2010). Caregivers' activity restriction can weaken their ability to build up or maintain social support.

Vara-García *et al.* also confirmed the direct relationships between age and mean arterial pressure and between body mass index and mean arterial pressure. Many caregivers are also older people. Therefore, age is a key factor for caregivers mean arterial pressure changes. Furthermore, in the western countries, it has long been known that blood

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pressure continuously increases with aging such that a progressively rising blood pressure was thought to be part of the normal aging process in the industrialized world (Rowe, 1983). Therefore, body mass index (obesity) is a risk factor for increased blood pressure (Chirinos *et al.*, 2009). Vara-García *et al.* controlled health characteristics or habits like body mass index or physical exercise. Nevertheless, authors recognized in the limitations section of their article that other health behaviors like smoking or alcohol consumption, or the use of medication like statins or antihypertensives, could be predictors of cardiovascular risk as well.

To mitigate caregivers' levels of blood pressure, health professionals should identify caregivers and ask them about their individual circumstances. What activity restriction do they have? What costs do they bear? How will they manage the restriction of normal or pleasurable activities? How are they coping with behavioral and psychological symptoms of dementia? What is their physical exercise plan? How are their health behaviors? Addressing the heterogeneity of caregivers is crucial. There are particular circumstances related to activity restriction, coping, and health behaviors, and there are also particular circumstances related to sociodemographic characteristics. For some people, caregiving occurs gradually over time. For others, it can happen overnight. Caregivers may be full- or part-time, live with their loved one, or provide care from a distance. Caregivers may come from different ethnic groups with different cultural values (Knight and Sayegh, 2010). Individuals who take care of their older relatives were labeled as caregivers by health professionals, usually as "stressed caregivers". Professionals usually consider caregivers as a homogeneous group although relatives consider themselves as a son, daughter, spouse, etc who take care of their loved ones; everyone is different and comes from different circumstances.

I congratulate Vara-García *et al.* (2022) on this useful contribution to the literature. Given the continuing growth of the dementia population and the potential link between activity restriction and mean arterial pressure, it is important to better understand the underlying mechanisms to reveal targets for prevention and intervention. Future research is needed to address this. Nevertheless, anyone expecting to find a silver bullet solution to alleviating caregiving problems will clearly be disappointed by the intervention literature in caregiving (López and Crespo, 2008). There is no single, easily implemented and consistently effective method for eliminating the caregiver's health problems. This is not surprising given the complexity of the caregiving experience and the variability in caregiver resources. At this point, the most reasonable conclusion is that we need more individually tailored treatments because these interventions are likely to be more effective than those which are not.

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