



DOCTORAL THESIS

THE ROLE OF CHARACTER STRENGTHS IN THE MENTAL
HEALTH OF INFORMAL DEMENTIA CAREGIVERS

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TESIS DOCTORAL

**EL ROL DE LAS FORTALEZAS PSICOLÓGICAS EN LA SALUD
MENTAL DE LOS CUIDADORES INFORMALES DE
PERSONAS CON DEMENCIA**

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Escuela de Doctorado

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La investigación responde a los requisitos de una Tesis Doctoral y la metodología adoptada es apropiada a los fines de investigación.

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Fdo. María José Blanca Mena

*To my Pelusa, those friends who always supported and
believed in me.*

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Introduction

The world's elderly population is comprised of nearly 900 million people (Prince et al., 2015). According to WHO (2019), in 2019, the number of people aged 60 years and older was 1 billion, being expected to increase to 1.4 billion by 2030 and 2.1 billion by 2050. Mortality rates among the elderly are falling, and life expectancy continues to rise worldwide, due to progress in social and health. As people live longer, chronic diseases become more prevalent and rates of dementia are increasing (Olazarán-Rodríguez et al., 2012; Prince et al., 2015). Dementia is classified as a major neurocognitive disorder in the *Diagnostic and Statistical Manual of Mental Disorders 5th edition* (DSM-5; American Psychiatric Association, 2013). It interferes in both cognitive function and the performance of everyday activities and is one of the major causes of disability in later life (Alzheimer's Association, 2016; Prince & Jackson, 2009; Prince et al., 2015).

Dementia is characterised by a progressive global deterioration in cognitive ability and the capacity for independent living. It affects different cognitive functions such as memory, learning, orientation, language, comprehension, and judgement. It mainly affects older people, beginning at an advanced age, although according to different estimations, between 2% and 10% of all cases start before the age of 65 years, with its prevalence doubling every 5 years after that (Prince & Jackson, 2009; Alzheimer's Association, 2016). The most common dementias are Alzheimer's disease, vascular dementia, dementia with Lewy bodies, and frontotemporal dementia (Prince & Jackson, 2009; Torrisi et al., 2017), the first one contributing to 60–70% of dementia cases (WHO, 2020).

Most people with dementia require some form of personal care as the disease progresses (Prince & Jackson, 2009; Prince et al., 2013). Caregivers are responsible for providing care and helping with the basic and daily instrumental activities of daily living. They are called informal caregivers when they do not receive any payment for this activity (Folquitto et al., 2013; Settineri et al., 2014). It has been estimated that in 2018/2019 around 4.5 million people were providing care in the United Kingdom, representing around 7% of the population, and persons in the age bracket of 55 to 64 years were the most likely group to care for others (Powell et al., 2020). In the United States, more than 21.3% of the population are caregivers (National Alliance for

Caregiving, 2020). In Spain, informal caregiving represents the only help for impaired people in more than 80% of cases of dependency (Ruiz-Robledillo, & Moya-Albiol, 2012).

Dementia not only impacts patients, but also informal caregivers, who typically experience negative effects on their physical and mental health and well-being due to being involved in the patient's care, spending most of their time in this role, and having abandoned many of their daily activities (Martínez-Cortés et al., 2011). One of the most widely studied negative consequences of caregiving is caregiver burden. This is defined as the negative impact perceived by caregivers on their emotional, social, financial, physical, and spiritual functioning as a result of social restrictions and the physical and emotional work that their care role entails (Zarit et al., 1980). However, caregiving also has positive consequences (Kramer, 1997a; Rapp & Chao, 2000). Caregiver gain is the term used by Kramer (1997a) to refer to any positive affective or practical benefit experienced by the caregiver as result of performing that role.

Pearlin et al. (1990) developed the stress process model in order to explore, analyse, and explain the consequences of caregiving. This model includes: 1) contextual factors, such as the demographic characteristics of the caregiver and care recipient, as well as variables related to caregiving; 2) primary stressors, which are those stress factors related to the care recipient's health and the degree of needed care; 3) secondary stressors, which are stress factors beyond the caregiving role; and 4) mediating and moderating factors, which may determine how well the caregivers cope with their role and stressors. Primary stressors have an impact on secondary stressors, both being influenced by contextual variables, which in turn influence mental health outcomes. Moreover, psychosocial resources that act as mediating and moderating factors may buffer the relationships between stressors and mental health outcomes. According to Pearlin and Bierman (2013), some of these psychosocial resources are personal mastery, coping strategies, social support, and beliefs and values.

The study of values as a psychosocial resource can be addressed from the perspective of positive psychology, and more specifically, using the Values in Action (VIA) classification proposed by Peterson and Seligman (2004). According to this classification, virtues are the core characteristics common to all religious and philosophical approaches and are regarded as being universal and independent of a specific historical moment. Each virtue is comprised of a number of character strengths. Character strengths are positive traits, relatively stable and universal, morally valued or beneficial to oneself and

others, and are manifested through thinking (cognition), feeling (affect), willing (conation or volition), and action (behaviour) (Niemic, 2013; Park et al., 2004; Peterson & Seligman, 2004).

Previous studies have investigated the mediation/moderation effects of several variables (e.g., religiosity, social support, personal mastery, self-efficacy, and coping styles) in relation to caregiver's physical and mental health. However, to the best of our knowledge, this role remains unexplored for character strengths as psychosocial resources. Research is still pending on considering character strengths in the stress process model, as well as analysing their relationship with caregiver gains and caregiver health outcomes, such as burden and well-being. An analysis of these relationships would be innovative and would help to identify which character strengths may act as protective factors against burden, increase caregiver gains, and improve caregiver well-being. Therefore, the aim of the present thesis was to identify which character strengths are associated with caregiver burden and gains, determine which of them are the best predictors for both variables, and explore their mediating or moderating effect on the relationship between stressors and caregiver burden and well-being.

Three empirical studies were conducted with a sample of informal dementia caregivers. The first of these studies was published in the *Journal of Happiness Studies* (JCR category: Psychology, multidisciplinary; IF = 2.511; Q1). It explored the association between character strengths and caregiver burden and the mediating/moderating effect of the significant character strengths on the relationship between contextual variables, stressors, and caregiver burden. The second study was published in *Aging and Mental Health* (JCR category: Gerontology; IF = 2.956; Q1) and investigated the association between character strengths and caregiver gains in order to determine the best predictors of caregiver gains among character strengths. Finally, the third study was published in the *Journal of Psychiatric and Mental Health Nursing* (JCR category: Nursing; IF = 1.947; Q1). It analysed the role of character strengths and caregiver gains as potential mediators in the relationship between stressors and life satisfaction, while controlling for contextual variables.

The first part of this thesis presents the theoretical background and employs the stress process model to explain the impact of caregiving on caregivers. The first section explains the impact of caregiving on caregiver physical and mental health. The second

section introduces the stress process model and explains the different kinds of variables and relationships among them. The third section focuses on values and character strengths, introducing each virtue and character strength from the perspective of positive psychology, and proposes the inclusion of these character strengths in the stress process model. Finally, all these sections are summarized in a fourth one. The second part of the thesis presents the previously mentioned empirical studies that were performed in order to address its aim.

Having described the empirical studies, the results are summarized and discussed, and general conclusions are presented. Finally, the limitations of the thesis are discussed, and future lines of research are proposed.

I. Theoretical Background

I.1. Impact of caregiving on caregiver physical and mental health

A caregiver is the person who provides care to someone whose health is impaired by sickness or old age (Settineri et al., 2014). Caregiving often falls to informal caregivers, that is, the impaired person's partner, relatives, or friends, who offer unpaid assistance with activities of daily living.

This role has a variety of negative consequences which have been widely studied (e.g., Chiao et al., 2015), including burden, depression, anxiety, stress, social isolation, decreased well-being and quality of life, sleep difficulties, and a heightened risk of cardiovascular disease (Conde-Sala et al., 2010; Kim et al., 2012; Raivio et al., 2015; Roepke et al., 2012; Settineri et al., 2014). Among these negative consequences, caregiver burden is one of the most widely studied topics in gerontology and the literature on caregivers. Caregiver burden has been defined as the negative impact perceived by caregivers on their emotional, social, financial, physical, and spiritual functioning as a result of social restrictions and the physical and emotional work that their care role entails (Zarit et al. 1980). Nowadays, many authors consider caregiver burden as a multidimensional response to the negative appraisal and perceived stress resulting from taking care of an ill individual (Kim et al., 2012), including the abovementioned dimensions (e.g., emotional, social, financial, etc.), despite the fact that caregiver burden is assessed with just one measure of global burden, which includes indicators of objective and subjective burden (Chiao et al., 2015; Crespo & Rivas, 2015; Dunkin & Anderson-Hanley, 1998; Folquitto et al., 2013; Pinquart & Sörensen, 2003; Zarit et al., 1980). The *Zarit Burden Interview* (ZBI; Zarit et al., 1980) is the most widely used instrument to assess caregiver burden (e.g., Contador et al., 2012; Park et al., 2015).

Research has identified numerous variables associated with caregiver burden. Regarding the characteristics of caregivers, previous studies have shown that higher levels of burden are reported by older, female, divorced caregivers, caregivers with a lower educational level, and persons who live with the care recipient (Chiao et al. 2015; Huang et al. 2012; Iavarone et al. 2014; Kim et al. 2012; Park et al. 2015). Regarding disease factors and other stressors, associations have been found between greater caregiver burden and more advanced stages of disease, comorbidity, lower Mini Mental

State Examination (MMSE) scores (i.e., higher cognitive impairment), and the presence and severity of behavioural manifestations or neuropsychiatric symptoms (e.g., Cheng 2017; Chiao et al. 2015; Contador et al. 2012; Hashimoto et al. 2017; Park et al. 2015; Raggi et al. 2015; Torrisi et al. 2017). In addition, associations have been found between higher levels of burden and being a caregiver with poor family functioning, a low income, and perceived financial difficulties (Chiao et al. 2015; Huang et al. 2012; Kim et al. 2012; Park et al. 2015; Raggi et al. 2015; Sun et al. 2009), whereas associations have been found between lower caregiver burden and the variables satisfaction with leisure time and larger social networks (Del-Pino-Casado & Ordóñez-Urbano 2016; Dunkin & Anderson-Hanley 1998). A positive association has also been found between caregiver burden and caregiver dysthymia and depression, anxiety, and social isolation (Contador et al., 2012; García-Alberca et al., 2012; Martínez-Cortés et al., 2011; Shrag et al., 2006; Vérez et al., 2015), whereas a negative association has been found between caregiver burden and self-rated health, well-being, and quality of life (Abdollahpour et al., 2014; Anum & Dasti, 2016; Shrag et al., 2006).

Well-being in caregivers is another health outcome variable that has been studied in order to assess the impact of the caregiving role on their health. Life satisfaction has been used as an indicator of well-being (e.g., Chappel & Reid, 2002; Khusaifan & El Keshky, 2017; Morano, 2003), because it is the cognitive measure of subjective well-being (Diener et al., 1999). The Satisfaction with Life Scale (SWLS; Diener et al., 1985) is probably the most used instrument to assess life satisfaction (Vázquez et al., 2013). A decrease in life satisfaction has been found in caregivers with higher levels of burden (Chappel & Reid, 2002). Associations have been found between lower life satisfaction and female gender, being unmarried, being unemployed caregivers, more hours of care, limited social activity, lower incomes, lower social support and resources, lower self-esteem, lower emotional empathy, higher stressfulness appraisals, less perceived benefits, and more health problems (Borg & Hallberg, 2006; Chappell & Reid, 2002; Fabà et al., 2017; Haley et al., 2003; Lee et al., 2001; Niimi, 2016; Wakabayashi & Kureishi, 2018).

However, despite the negative consequences, caregiving may also lead to benefits. Cohen et al. (2002) suggested that most family and friends involved in informal caregiving can identify at least one positive aspect of their caregiving role, and that more positive feelings about caring are associated with lower caregiver burden, less

depression, and better self-rated health. Other researchers have identified some of the positive aspects of informal caregiving, such as finding meaning through care, increased personal satisfaction, personal and spiritual growth, the development of skills, and improved interpersonal relationships (Cheng et al., 2013; Netto et al., 2009; Rapp & Chao, 2000; Sanders, 2005). In this context, Kramer (1997a) used the term *gain* to refer to the extent to which the caregiving role is perceived as enhancing an individual's life space and as being enriching, including any positive affective or practical benefits that are experienced as a direct result of becoming a caregiver. Sanders (2005) proposed three main categories of caregiver gains: 1) Spiritual growth and increased faith, which refers to increased spiritual feelings and, for some people, a closer relationship with god; 2) Personal growth, understood as changes in the caregiver's personality, such as becoming more patient or responsible; 3) Feelings of mastery and accomplishment, referring to a feeling of mastery based on the successful performance of caregiving tasks. In this line, Netto et al. (2009) also proposed three main categories: 1) Personal growth, referring to internal changes, such as increased self-awareness and becoming more patient, understanding, resilient, and knowledgeable; 2) Gains in relationships, understood as improved skills in interacting with the care recipient and other people; 3) Higher-level gains, such a stronger sense of spirituality, a deeper relationship to god, or a more enlightened perspective on life. In line with these three categories, Yap et al. (2010) developed the *Gain in Alzheimer care Instrument* (GAIN) in order to assess the benefits of caring for a person with dementia.

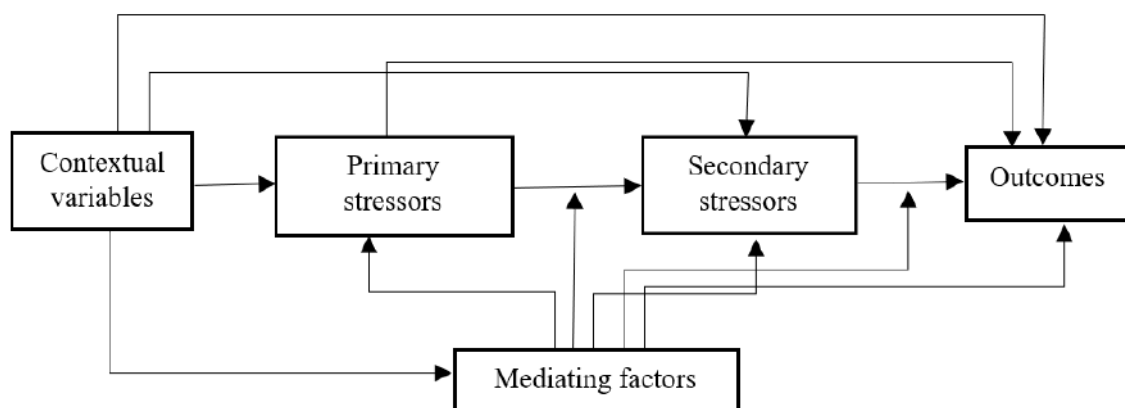
Liew et al. (2010) found that caregiver gains were higher among caregivers who did not work, had been caregivers for more than 3 years, spent more than 60% of their time per week on caregiving tasks, had daily contact with patients, had few or no financial difficulties, attended caregiver educational and support group programmes, and cared for patients in more advanced stages of dementia. Liew et al. (2010) suggested that more frequent or close contact with the person with dementia offers caregivers increased opportunities to feel empowered, insofar as they may develop effective strategies for providing care. The empirical evidence has also shown positive associations between caregiver gains and well-being, life satisfaction, sense of competence, religiosity, and the use of caregiving strategies focused on encouragement and active management; conversely, negative associations have been found between caregiver gains and caregiver burden, depression, mental health problems, and criticism as a caregiving strategy

(Cheng et al., 2013; Fabà & Villar, 2013; Fabà et al., 2017; Liew et al., 2010; Yap et al., 2010).

1.2. The Stress Process Model

The stress process model (Pearlin et al., 1981) is the main theoretical framework for understanding the role of social stress in generating mental health problems. Pearlin et al. (1990) adapted this model to explain the consequences of informal caregiving, focusing on the particular challenges in managing and coping with caregiving as well as the activities and experiences involved in providing help to care recipient. Since then, a growing body of research has emerged in order to study the impact of caregiving on caregivers' health (e.g., Chappel & Reid, 2002; Conde-Sala et al., 2010; Kim et al., 2012; Löckenhoff et al., 2011; McLennon et al., 2011). This model considers various factors which may interact and determine how a person reacts to this role (Figure 1). These factors are as follows: 1) contextual factors, such as the sociodemographic characteristics of caregivers and care recipients (e.g., gender, age, or educational level), or variables related to caregiving (e.g., how long a person has fulfilled this role); 2) primary stressors, referring to stress factors directly related to the care recipient's health and the degree of care needed, and which may be objective (e.g., cognitive impairment or challenging behaviour) or subjective (e.g., perceived overload in the caregiver); 3) secondary stressors, understood as stress factors beyond the caregiving role, such as the restriction of social life, difficulties at work, or financial strain; and 4) mediating and moderating factors that can determine how well caregivers cope with their role and which may account for variability in the health consequences they experience.

Figure 1. Stress process model. Adapted from Pearlin et al. (1990).



According to this model, primary stressors have an impact on secondary stressors, which, in turn, are influenced by contextual variables and influence mental health outcomes. These direct relationships between contextual variables, stressors, and mental health outcomes have been explained in the previous section.

Among mediating and moderating factors, Pearlin and Bierman (2013) included psychological resources, such as personal mastery, coping strategies, social support, and beliefs and values. Previous studies have investigated the mediation/moderation effects of several variables (e.g. religiosity, social support, personal mastery, self-efficacy, and coping styles) in relation to physical and mental health (Honda et al., 2013; Löckenhoff et al., 2011; McLennon et al., 2011; Reizer & Hetsroni, 2015), depression (Cheng et al., 2013; Gallant & Connell, 2003; Mausbach et al., 2006, 2012; Morano & King, 2005; Wang et al., 2014), caregiver burden (Fauziana et al., 2018; Wang et al., 2018), and life satisfaction (Chappel & Reid, 2002; Morano, 2003). The positive aspects or perceived gains of caregiving have also been proposed as a mediator variable in the stress process model (Cheng et al., 2013; Fauziana et al., 2018; McLennon et al., 2011). McLennon et al. (2011) found that the positive aspects of caregiving mediated the relationship between caregiver burden and mental health, whereas Fauziana et al. (2018) reported that the perception of benefits mediated the relationship between life satisfaction and caregiver burden. Both studies suggested that the ability to find meaning and detect positive aspects in caregiving may act as a coping strategy, enabling the caregiver to deal more effectively with care-related stressors. However, these two studies have focused on the mediating effect of the positive aspects of caregiving in the relationship between outcome variables and not between primary and secondary stressors and these outcome variables. Thus, further investigation is warranted including perceived gains in the stress process model as a mediator taking into account both primary and secondary stressors.

In addition, the role of beliefs and values as mediator or moderator variables has also received little attention in previous studies. The study of values can be addressed from the perspective of positive psychology, which is a young field in psychology focused on building positive qualities (Seligman & Csiksentmihalyi, 2000), and, more specifically, using the strengths from the Values in Action (VIA) classification proposed by Peterson and Seligman (2004). Strengths may act as psychosocial resources that mediate/moderate the relationship between stressors and health outcome variables within the framework of the stress process model.

1.3. Values and character strengths

The VIA classification establishes two components of good character: virtues and character strengths. Virtues are the core characteristics common to all religious and philosophical approaches and are regarded as universal and independent of a specific historical moment. Each virtue is comprised of a number of character strengths, understood as ubiquitously recognized positive traits that are manifested through thinking (cognition), feeling (affect), will (conation or volition), and action (behaviour). Peterson and Seligman (2004) conceived of character strengths as being measurable and relatively stable, but also flexible enough to be fostered and to allow further development. These positive traits are considered the basic building blocks of human goodness and thriving (Niemiec, 2013; Park, Peterson, & Seligman, 2004; Peterson & Seligman 2004). Peterson and Seligman (2004) identified 24 character strengths, classified in six major virtues (Table I), and also developed the *Values in Action Inventory of Strengths* (VIA-IS) in order to assess the degree to which individuals endorse items reflecting the 24 character strengths.

In recent decades, researchers have shown that the endorsement of character strengths can enhance a person's quality of life and prevent psychological maladjustment. Although character strengths as a whole are linked to life satisfaction (Park et al., 2004), strengths such as hope, zest, gratitude, love, and curiosity have a particularly strong positive relationship with life satisfaction and happiness (Blanca et al., 2018; Lee et al., 2015; Ovejero et al., 2016; Park et al., 2004; Peterson et al., 2007; Proyer et al., 2011). Studies have also found a positive association between most character strengths and positive affect (Littman-Ovada & Lavy, 2012; Azañedo et al., 2014; Azañedo et al., 2017). Specifically, Martínez-Martí and Ruch (2014) found the strongest positive correlations between hope, zest, humor, gratitude, and love and positive affect, and the strongest negative correlations between hope, humor, zest, honesty, and judgment and negative affect.

Character strengths have also been associated with emotional intelligence, because individuals with higher scores on character strengths tend to regulate and repair their emotions more efficiently (Ros-Morente et al., 2018). Furthermore, associations have been found between hope and zest and fewer emotional problems, such as depression and anxiety (Lam, 2021; Niemiec, 2013; Park & Peterson, 2008; Zhou et al.,

2013), and negative associations have been found between gratitude, forgiveness, spirituality, and judgment and depression (Lam, 2021; Luna & MacMillan, 2015; Tehranchi et al., 2018).

Table 1. *Virtues in Action (VIA) classification of virtues and character strengths. Adapted from Park et al. (2004), and Park and Peterson (2008).*

Virtues	Character strengths	Description
Wisdom and knowledge		Cognitive strengths that entail the acquisition and use of knowledge.
	Creativity (originality, adaptivity or ingenuity)	Thinking of novel and productive ways to do things; includes artistic achievement but is not limited to it.
	Curiosity (interest, novelty-seeking, exploration or openness to experience)	Taking an interest in all of ongoing experience; finding all subjects and topics fascinating; exploring and discovering.
	Judgment (critical thinking or open-mindedness)	Thinking things through and examining them from all sides; not jumping to conclusions; being able to change one's mind in light of evidence; weighing all evidence fairly.
	Love of learning	Mastering new skills, topics, and bodies of knowledge, whether on one's own or formally; obviously related to the strength of curiosity but goes beyond it to describe the tendency to add systematically to what one knows.
	Perspective (wisdom)	Being able to provide wise counsel to others; having ways of looking at the world that make sense to oneself and to other people.
Courage		Emotional strengths that involve the exercise of will to accomplish goals in the face of opposition, external or internal.
	Bravery (valour)	Not shrinking from threat, challenge, difficulty, or pain; speaking up for what is right even if there is opposition; acting on convictions even if unpopular; includes physical bravery but is not limited to it.
	Perseverance (persistence or industry)	Finishing what one starts; persisting in a course of action in spite of obstacles; "getting it out the door"; taking pleasure in completing tasks.
	Honesty (authenticity or integrity)	Speaking the truth but more broadly presenting oneself in a genuine way; being without pretence; taking responsibility for one's feelings and actions.
	Zest (vitality, enthusiasm, vigour or energy)	Approaching life with excitement and energy; not doing things halfway or halfheartedly; living life as an adventure; feeling alive and activated.

Table 1 (continuation). *Virtues in Action (VIA) classification of virtues and character strengths. Adapted from Park et al. (2004), and Park and Peterson (2008).*

Virtues	Character strengths	Description
Humanity		Interpersonal strengths that involve tending and befriending others.
	Love	Valuing close relations with others, in particular those in which sharing and caring are reciprocated; being close to people.
	Kindness (generosity, nurturance, care, compassion, altruism or “niceness”)	Doing favours and good deeds for others; helping them; taking care of them.
	Social intelligence (emotional intelligence or personal intelligence)	Being aware of the motives and feelings of other people and oneself; knowing what to do to fit in to different social situations; knowing what makes other people tick.
Justice		Civic strengths that underlie healthy community life.
	Teamwork (citizenship, social responsibility or loyalty)	Working well as a member of a group or team; being loyal to the group; doing one’s share.
	Fairness	Treating all people the same according to notions of fairness and justice; not letting personal feelings bias decisions about others; giving everyone a fair chance.
	Leadership	Encouraging a group of which one is a member to get things done and at the same time maintaining good relations within the group; organizing group activities and seeing that they happen.
Temperance		Strengths that protect against excess
	Forgiveness (mercy)	Forgiving those who have done wrong; giving people a second chance; not being vengeful.
	Humility (modesty)	Letting one’s accomplishments speak for themselves; not seeking the spotlight; not regarding oneself as more special than one is.
	Prudence	Being careful about one’s choices; not taking undue risks; not saying or doing things that might later be regretted.
	Self-regulation (self-control or discipline)	Regulating what one feels and does; being disciplined; controlling one’s appetites and emotions.

Table 1 (continuation). *Virtues in Action (VIA) classification of virtues and character strengths. Adapted from Park et al. (2004), and Park and Peterson (2008).*

Virtues	Character strengths	Description
Transcendence		Strengths that forge connections to the larger universe and provide meaning.
	Appreciation of beauty and excellence (awe, wonder or elevation)	Noticing and appreciating beauty, excellence, and/or skilled performance in all domains of life, from nature to art to mathematics to science to everyday experience.
	Gratitude	Being aware of and thankful for the good things that happen; taking time to express thanks.
	Hope (optimism, future mindedness or future orientation)	Expecting the best in the future and working to achieve it; believing that a good future is something that can be brought about.
	Humor (playfulness)	Liking to laugh and tease; bringing smiles to other people; seeing the light side; making (not necessarily telling) jokes.
	Spirituality (religiousness, faith, purpose or meaning)	Having coherent beliefs about the higher purpose and meaning of the universe; knowing where one fits within the larger scheme; having beliefs about the meaning of life that shape conduct and provide comfort.

Research has also suggested that individuals who endorse character strengths are more likely to perceive less stress and that these strengths may function as a defence against perceived stress (Duan, 2016; Lee et al., 2020; Li et al. 2017) and depression (Lee et al., 2020). Harzer and Ruch (2015) suggested that character strengths are valuable resources to improve coping with work-related stress and reduce the negative effects of stress.

Park and Peterson (2009) suggested that it is possible to cultivate these positive traits to promote a psychologically healthy life. Positive psychology interventions attempt to foster positive feelings, behaviours, or cognitions (Sin & Lyubomirsky, 2009), and they may improve the effectiveness of traditional psychotherapy (Rashid, 2015). Some of these interventions attempt to identify character strengths and propose activities that can help people to develop them or use them more often or in different ways (Quinlan et al., 2012). Some examples of these activities include expressing gratitude, thinking about positive life events, practicing optimistic thinking, practicing kindness, and visualizing an ideal future (e.g., Boehm et al., 2011; Lyubomirsky et al., 2011; Mongrain & Anselmo-Matthews, 2012; Rashid, 2015; Seligman et al., 2005). The empirical evidence suggests that positive interventions which seek to promote character strengths can

enhance well-being, reduce symptoms of depression, or reduce stress (Bolier et al., 2013; Lee et al., 2020; Sin & Liubomirsky, 2009). A recent meta-analysis by Schutte and Malouff (2018) investigated the impact of character strength interventions compared to that of controls and found an association between such interventions and increased happiness and life satisfaction and decreased depression. Chakhssi et al. (2018) also conducted a meta-analysis and found that positive interventions were effective in improving well-being and reducing distress in people with clinical disorders. In a systematic review of the evidence on positive interventions used in breast cancer, Casellas-Grau et al. (2014) identified five groups of therapies (expression of positive emotions, hope therapy, spiritual intervention, meaning-making interventions, and mindfulness-based approaches) that were associated with enhanced well-being, quality of life, hope, optimism, life satisfaction, and happiness.

Lyubomirsky and Layous (2013) proposed the positive-activity model in order to explain how and why positive activities work and can boost well-being. They suggested that such activities stimulate an increase in positive emotions, positive thoughts, and positive behaviour, as well as the satisfaction of basic psychological needs (e.g., autonomy, connectedness, and competence). According to their model, the extent to which well-being is enhanced will be influenced both by features of the activity (e.g., social support or dosage) and features of the person (e.g., motivation or efficacy beliefs).

Given that empirical evidence has shown negative associations between some character strengths and stress and psychological problems, such as depression and anxiety, as well as positive associations with positive affect, happiness, or life satisfaction, it is plausible that they are associated with caregiver burden or caregiver gains, which have also been associated with the abovementioned variables. Furthermore, it has been suggested that character strengths may function as protective factors against stress and mental health problems (Duan, 2016; Lee et al., 2020; Li et al., 2017). Given that values have been proposed as mediating or moderating factors in the stress process model (Pearlin & Bierman, 2013), it is therefore possible that some character strengths may also protect against stressors, decrease caregiver burden, and increase caregiver gains and well-being.

To the best of our knowledge, no previous studies have investigated the relationship between character strengths and caregiver burden, gains, and life

satisfaction. Neither have studies been conducted on the potential mediating or moderating effect of character strengths on the relationship between stressors and health outcome variables within the framework of the stress process model. The analysis of these relationships would help to identify which character strengths may act as protective factors against burden and to identify the mechanism through which stressors may influence mental health.

1.4. Summary

The caregiving role involves a variety of negative consequences (Chiao et al., 2015), caregiver burden being one of the most widely studied. Caregiver burden is defined as the negative impact perceived by caregivers on their emotional, social, financial, physical, and spiritual functioning as a result of social restrictions and the physical and emotional work that their role entails (Zarit et al., 1980). However, caregiving also has positive consequences. Kramer (1997a) used the term *gain* to refer to the extent to which the caregiving role is perceived as enhancing an individual's life space and as being enriching, including any positive affective or practical benefits that are experienced as a direct result of becoming a caregiver.

The main theoretical framework for explaining the consequences of caregiving is the stress process model (Pearlin et al., 1990; Pearlin & Bierman, 2013). This model takes into account various factors which may interact and determine how a person reacts to this role (contextual factors, primary stressors, secondary stressors, and mediating and moderating factors). According to this model, primary stressors have an impact on secondary stressors which, in turn, are influenced by contextual variables and influence mental health outcomes. This model also suggests that the relationship between stressors and mental health outcomes is mediated or moderated by psychosocial resources.

The study of values as a psychosocial resource can be addressed from the perspective of positive psychology, and more specifically, using the VIA classification proposed by Peterson and Seligman (2004). This classification establishes two components of good character: virtues and character strengths. Virtues are the core characteristics common to all religious and philosophical approaches, and are regarded as being universal and independent of a specific historical moment. Each virtue is comprised of a number of character strengths, which are ubiquitously recognized

positive traits that are manifested through thinking (cognition), feeling (affect), will (conation or volition), and action (behaviour).

To the best of our knowledge, research is still pending on the relationship between character strengths and caregiver burden, gains, and life satisfaction. Neither have studies been conducted on the potential mediating or moderating effect of character strengths on the relationship between stressors and health outcome variables within the framework of the stress process model. The analysis of these relationships would help to identify which character strengths may act as protective factors against burden and to identify the mechanism through which stressors may influence mental health. This would provide a platform for the design of intervention programs based on positive psychology aimed at developing character strengths in order to reduce the negative impact of stressors and improving well-being among caregivers.

II. Empirical Studies

2.1. General and specific aims of the thesis

The general aim of this thesis was to explore the role of character strengths in informal caregivers of people with dementia, according to the stress process model. To this end, three studies were performed.

The first study explored the association between character strengths and caregiver burden. Firstly, we identified which character strengths are associated with caregiver burden and determined — after controlling for contextual variables and primary and secondary stressors — which of them are the best predictors of burden. Secondly, we analysed the mediating/moderating effects of the significant character strengths on the relationship between contextual variables, primary and secondary stressors, and caregiver burden.

The second study investigated the association between character strengths and caregiver gains. We identified which character strengths are associated with caregiver gains and determined — after controlling for contextual variables and primary and secondary stressors — which of them are the best predictors of gains.

The third study explored the role of character strengths and caregiver gains as potential mediators in the relationship between primary and secondary stressors and life satisfaction in informal caregivers of people with dementia, while controlling for contextual variables. Firstly, we identified the contextual variables and primary and secondary stressors which are statistically significant in predicting life satisfaction. Secondly, we analysed the relationship between life satisfaction and character strengths. Finally, having identified the particular contextual variables, stressors, and mediators that contribute most to life satisfaction, we tested a mediation model that was consistent with the stress process model.

2.2. Association between Character Strengths and Caregiver Burden:

Hope as a Mediator

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Abstract

Caregiver burden is the negative impact that caregivers perceive as a result of their caregiving tasks. According to the stress process model, contextual variables and primary and secondary stressors produce negative mental health outcomes in caregivers. However, this relationship may be buffered by psychological resources which act as mediators/moderators. Although there is research on the mediating/moderating effect of mastery, coping strategies, and social support, the effect of psychological values remains unexplored. This study aimed to explore, after controlling for contextual variables and stressors, which character strengths are associated with caregiver burden. We also sought to analyse the mediating/moderating effect of character strengths on the relationship between burden and the significant contextual variables and stressors. To this end, a sample of 115 caregivers of people diagnosed with dementia completed a questionnaire battery. Correlational analysis, multiple regression modeling, and mediation and moderation analysis were performed. The results revealed that the caregivers who experience the greatest burden are those who live with the care recipient, who score higher on perceived stress, who feel their leisure time is limited, and who perceive more financial strain. Higher scores on caregiver burden were associated with lower scores on hope, zest, social intelligence, and love. Regression modeling indicated that hope was the strength which best predicted burden and that hope mediated the relationship between perceived stress and burden. No moderation effect was found. The results suggest that hope-based programs could enhance positive emotions and reduce the perceived negative impact of caregiving.

Keywords: Alzheimer; Dementia; Financial strain; VIA-IS; ZBI; Virtues; Leisure time; Perceived stress.

Introduction

Caregiver burden has been defined as the negative impact perceived by caregivers on their emotional, social, financial, physical, and spiritual functioning as a result of social restrictions and the physical and emotional work that their care role entails (Zarit et al., 1980). It can thus be considered a multidimensional response to the negative appraisal and perceived stress resulting from taking care of an ill individual (Kim et al., 2012). Research has found that burden is positively associated with caregiver dysthymia and depression, anxiety, and social isolation (García-Alberca et al., 2012; Vérez et al., 2015; Martínez-Cortés et al., 2011), and negatively associated with self-rated health, well-being, and quality of life (Abdollahpour et al., 2014; Anum & Dasti, 2016; Shrag et al., 2006).

Identifying factors which predict caregiver burden could be useful for the development of intervention programs aimed at improving the quality of life of both caregivers and care recipients (Contador et al., 2012). The main theoretical model that identifies predictors of burden is the stress process model (Pearlin & Bierman, 2013; Pearlin et al., 1990) which has been adapted (Conde-Sala et al., 2010) and widely used in research (e.g., Kim et al., 2012; Mausbach et al., 2012; McLennon et al., 2011). According to this model, primary stressors have an impact on secondary stressors, which in turn have an effect on mental health outcomes. Primary stressors can be both objective (e.g., the care recipient's symptoms and the disease progression) and subjective (e.g., perceived overload in the caregiver). Secondary stressors are the strains experienced in roles and activities outside of caregiving, such as family conflict, financial difficulties, difficulty participating in social activities or difficulties at work. Both primary and secondary stressors are influenced by contextual/background variables, such as the sociodemographic profile of both caregiver and care recipient (age, socioeconomic status, educational level, etc.) and aspects related to the caregiving role (e.g., duration of caregiving, number of people sharing care tasks, etc.). The relationship between contextual variables, primary and secondary stressors, and mental health outcomes may be buffered by psychosocial resources that act as mediators/moderators. In this respect, the stress process model is similar to the theory of stress proposed by Lazarus and Folkman (1984), in which stress is related to stressors and to an individual's resources for coping with them.

Research has identified numerous stressors associated with caregiver burden. Although the empirical evidence is somewhat inconsistent across samples with regard to contextual variables, some studies have shown that higher levels of burden are reported by older, female, divorced caregivers, by caregivers with a lower educational level, and by those who live with the care recipient (Chiao et al., 2015; Huang et al., 2012; Iavarone et al., 2014; Kim et al., 2012; Park et al., 2015). Among primary stressors, studies have shown that greater caregiver burden is associated with more advanced stages of disease, comorbidity, lower Mini Mental State Examination (MMSE) scores (i.e., higher cognitive impairment), and the presence and severity of behavioural manifestations or neuropsychiatric symptoms (e.g., Cheng, 2017; Chiao et al., 2015; Contador et al., 2012; Hashimoto et al., 2017; Park et al., 2015; Raggi et al., 2015; Torrisi et al., 2017). Regarding secondary stressors, research has found that caregivers with poor family functioning, a low income, and perceived financial difficulties report higher levels of burden (Chiao et al., 2015; Huang et al., 2012; Kim et al., 2012; Park et al., 2015; Raggi et al., 2015; Sun et al., 2009). Conversely, satisfaction with leisure time and larger social networks are variables associated with less caregiver burden (Del-Pino-Casado & Ordóñez-Urbano, 2016; Dunkin & Anderson-Hanley, 1998).

The empirical evidence also suggests considerable variation in the extent to which caregivers cope with their role. Thus, while some caregivers seem to manage stressors successfully, others do not and suffer negative outcomes such as burden, depression, anxiety, and poor mental and physical health (Conde-Sala et al., 2010). These differences may be explained by mediating or moderating factors. Pearlin and Bierman (2013) included among these factors a person's psychological resources such as personal mastery, coping strategies, social support, and beliefs and values. Research in this field has shown that the relationship between stress and depression in Alzheimer's caregivers is significantly mediated by personal mastery or perceived control, efficacy beliefs, activity restriction, and avoidance coping (Mausbach et al., 2006, 2012). A more recent report found that social support significantly moderated the effects of the Alzheimer's patient's cognitive function and depression on caregiver burden, and also that the positive aspects of caregiving mediated the relationship (Wang et al., 2018). However, the role of beliefs and values has received little attention in previous studies.

The study of values can be addressed from the perspective of positive psychology, and more specifically using the Values in Action (VIA) classification proposed by Peterson

and Seligman (2004). This classification establishes two components of good character: virtues and character strengths. Virtues are the core characteristics common to all religious and philosophical approaches, and they are regarded as universal and independent of a specific historical moment. Each virtue is comprised of a number of character strengths, ubiquitously recognized positive traits that are manifested through thinking (cognition), feeling (affect), will (conation or volition), and action (behaviour). Peterson and Seligman (2004) conceived of character strengths as being measurable and relatively stable, but also flexible enough to be fostered and to allow further development. The VIA classification includes six classes of virtues and 24 character strengths, which are listed in Table 2. Peterson and Seligman (2004) also developed the Values in Action Inventory of Strengths (VIA-IS) in order to measure the degree to which individuals endorse items reflecting the 24 strengths.

In recent decades, research has shown that the endorsement of strengths is related to higher perceived quality of life and psychological adjustment. Although character strengths as a whole are linked to life satisfaction (Park et al., 2004), the positive relationship with life satisfaction and happiness is particularly strong for strengths such as hope, zest, gratitude, love, and curiosity (Lee et al., 2015; Ovejero et al., 2016; Park et al., 2004; Proyer et al., 2011). Studies have also shown that most character strengths are positively related to positive affect (Littman-Ovada & Lavy, 2012; Azañedo et al., 2014, 2017), with hope, zest, humor, gratitude, and love yielding the strongest positive correlations (Martínez-Martí & Ruch, 2014).

Strengths are also associated with emotional abilities, insofar as individuals who score high on character strengths tend to regulate and repair their emotions more efficiently (Ros-Morente et al., 2018). Furthermore, hope and zest have been associated with fewer emotional problems such as depression and anxiety (Niemiec, 2013; Park & Peterson, 2008; Zhou et al., 2013). Other strengths negatively correlated with depression are gratitude, forgiveness, spirituality, and judgment (Luna & MacMillan, 2015; Tehranchi et al., 2018).

Research also suggests that individuals who endorse character strengths are more likely to perceive less stress (Li et al., 2017). It has been argued that strengths may function as a defense against perceived stress (Duan, 2016), that they allow for psychological and physiological adaptation to stress (Li et al., 2017), and that they are

valuable resources to improve coping with work-related stress and reduce the negative effects of stress (Harzer & Ruch, 2015).

Table 2. *Virtues and character strengths, examples of items, and internal consistency coefficients.*

Strength	Example of item	Internal consistency
Wisdom and knowledge		
Creativity	I am always coming up with new ways to do things	.73
Curiosity	I am always busy with something interesting	.66
Love of learning	I read all of the time	.86
Judgment	I always weigh the pros and cons	.48
Perspective	Others consider me to be a wise person	.68
Courage		
Honesty	I always keep my promises	.73
Bravery	I always stand up for my beliefs	.61
Perseverance	I always finish what I start	.76
Zest	I have lots of energy	.71
Humanity		
Kindness	I really enjoy doing small favors for friends	.50
Love	I can express love to someone else	.70
Social intelligence	I always know what to say to make people feel good	.50
Justice		
Fairness	Everyone's rights are equally important to me	.56
Leadership	As a leader, I treat everyone equally well regardless of his or her experience	.67
Teamwork	Without exception, I support my teammates or fellow group members	.62
Temperance		
Forgiveness	I believe it is best to forgive and forget	.51
Humility	I never brag about my accomplishments	.50
Prudence	I always make careful choices	.65
Self-Regulation	I am a highly disciplined person	.45
Transcendence		
Appreciation of beauty and excellence	I am always aware of the natural beauty in the environment	.69
Gratitude	I feel thankful for what I have received in life	.61
Hope	I know that I will succeed with the goals I set for myself	.65
Humor	I try to add some humor to whatever I do	.84
Spirituality	I practice my religion	.72

Park and Peterson (2009) suggest that it is advisable to cultivate these positive traits for a psychologically healthy life. Positive psychology interventions aim to foster positive feelings, behaviours or cognitions (Sin & Lyubomirsky, 2009), and they may improve the effectiveness of traditional psychotherapy (Rashid, 2015). Some interventions in this context aim to identify character strengths and to propose activities that can help people to develop them or use them more often or in different ways (Quinlan et al., 2012). Examples of such activities include expressing gratitude, thinking about positive life events, practicing optimistic thinking, practicing kindness, and visualizing an ideal future (e.g., Boehm et al., 2011; Lyubomirsky et al., 2011; Mongrain & Anselmo-Matthews, 2012; Rashid, 2015; Seligman et al., 2005). The empirical evidence suggests that positive interventions which seek to promote character strengths can enhance well-being, happiness and reduce symptoms of depression (Bolier et al., 2013; Schutte & Malouff, 2018; Sin & Lyubomirsky, 2009). Positive interventions have also been consistently shown effective in improving well-being and reducing distress in people with clinical disorders (Chakhssi et al., 2018) and enhanced quality of life, hope, optimism, life satisfaction, and happiness in breast cancer (Casellas-Grau et al., 2014).

Lyubomirsky and Layous (2013) proposed the positive-activity model in order to explain how and why positive activities work and are able to boost well-being. They suggest that such activities stimulate an increase in positive emotions, positive thoughts, and positive behaviour, as well as the satisfaction of basic psychological needs (e.g., autonomy, connectedness, and competence). According to their model, the extent to which well-being is enhanced will be influenced both by features of the activity (e.g., social support or dosage) and features of the person (e.g., motivation or efficacy beliefs).

Given that some character strengths have been associated with decreased stress and fewer psychological problems such as depression and anxiety, it is plausible that strengths may also be related to other responses to stress such as caregiver burden. As we noted earlier, caregiver burden is positively related to anxiety and depression and negatively associated with wellbeing. Furthermore, it has been suggested that character strengths may function as protective factors against stress and mental health problems (Duan, 2016; Li et al., 2017). It is therefore possible that some character strengths may also protect against caregiver burden, such that caregivers who endorse these strengths would experience less burden.

To the best of our knowledge, the relationship between caregiver burden and character strengths has yet to be explored. However, an analysis of this relationship would help to identify which character strengths are related to burden and may mediate or moderate the relationship between stressors and burden. This would provide a platform for the design of intervention programs aimed at developing personal strengths, enhancing positive emotions, and improving well-being among caregivers. The goal of the present study was therefore to identify which character strengths are associated with caregiver burden and to determine—after controlling for contextual variables and primary and secondary stressors—which of them are the best predictors of burden. We expected to find a negative correlation between caregiver burden and character strengths, especially hope and zest, which seem to be the most important character strengths in relation to emotional problems such as depression and anxiety (Niemic, 2013; Park & Peterson, 2008; Zhou et al., 2013).

From the point of view of research, identifying the strengths which best predict caregiver burden would enable a more detailed examination of their role within the stress process model, analysing their mediating or moderating effects on the relationship between stressors and health outcomes. Consequently, a further aim of this study was, having identified the significant character strengths, to examine their mediating/moderating effect on the relationship between contextual variables, primary and secondary stressors, and caregiver burden.

Method

1. Participants

The sample comprised 115 main caregivers (25 males and 90 females) of people diagnosed with dementia. They were aged between 35 and 82 years ($M = 56.15$, $SD = 12.93$) and were recruited through 11 different associations for families of people with Alzheimer's and other dementias in the province of Malaga, Spain. The inclusion criteria were: (1) age 18 years or older; (2) being the main caregiver for at least 6 months; (3) care recipient has a diagnosis of dementia; (4) care recipient attends a day center run by one of the abovementioned associations; and (5) signing of informed consent. Most participants were of Spanish origin (97.4%), married (72.1%), and the son or daughter of the care recipient (66.1%). The time of being the main caregiver ranged from .5 to

28 years ($M = 4.79$; $SD = 3.773$). Table 3 details the sample characteristics and the information collected about caregiving.

Table 3. *Sociodemographic data for the sample and information collected about caregiving.*

Variables	Percentage
Gender	
Male	21.7
Female	78.3
Marital status	
Married	72.1
Single	15.7
Divorced or separated	6.1
Widowed	6.1
Relationship to the care recipient	
Son or daughter	66.1
Spouse	27.8
Other	6.1
Level of education	
No schooling	8.7
Primary	32.2
Secondary	23.4
University	35.7
Employment status	
Unemployed	29.6
Employed	43.4
Retired/Not working due to disability	27
Religion	
Practicing Catholic	32.2
Non-practicing Catholic	43.5
Atheist/agnostic	18.2
Other	6.1
Living with the care recipient	
Yes	79.1
No	20.9
Number of people with whom caregiver lives	
0	2.6
1	40
2	19.1
3	16.5
4	12.2
More than 4	9.6
Number of people with whom caregiver shares care tasks	
0	37.4
1	27.0
2	20.0
3	8.7
More than 3	7.0
Attends support group	
Yes	27.8
No	72.2

Table 3 (continuation). *Sociodemographic data for the sample and information collected about caregiving.*

Variables	Percentage
Perceived financial difficulties (1-6)	
1- 2 (No difficulties)	23.5
3	33.9
4	20.9
5-6 (Very difficult)	21.7
Perceived limitation of leisure time	
No	28.7
Yes	71.3
Care recipient cognitive impairment (MMSE)	
No impairment	6.1
Mild	18.2
Moderate	43.5
Severe	32.2
Independence for activities of daily living (Barthel Index)	
Independent	9.6
Minimally dependent	10.4
Partially dependent	39.1
Very dependent	30.5
Totally dependent	10.4

2. Measures

2.1. Sociodemographic Questionnaire

Participants were asked to complete a questionnaire that gathered sociodemographic data and information related to contextual variables and primary and secondary stressors so that, in the statistical analysis, we could control for the possible influence of these variables. Specifically, the questionnaire recorded the caregiver's gender, age, marital status, relationship to the care recipient, level of education, employment status, religion, whether or not they lived with the care recipient, the number of people with whom the caregiver lived and shared care tasks, whether they attended a support group, perceived financial difficulties, and whether they felt they had enough leisure time. The response options for these variables are shown in Table 3. The care recipient's score on the MMSE, as a measure of the degree of cognitive impairment, and on the Barthel Index, as a measure of the degree of independence for activities of daily living, were also considered as control variables.

2.2. Perceived Stress

This variable was measured with the stress subscale of the Depression Anxiety Stress Scales (DASS-21; Lovibond & Lovibond, 1995a, b), in its Spanish version (Daza et al., 2002). The stress subscale contains seven items that the respondent must rate using a four-point Likert-type scale (0 = did not apply to me at all; 3 = applied to me

very much, or most of the time). An example item is: *I found it difficult to relax*. Cronbach's alpha coefficient in the present sample was .88. Higher scores indicate a higher level of perceived stress related to difficulty relaxing and being tense, easily agitated, nervous and irritable.

2.3. Caregiver Burden

The burden perceived by caregivers was assessed with the Zarit Burden Interview (ZBI; Zarit et al., 1980), in its Spanish version (Martín et al., 1996). The ZBI comprises 22 self-report items that are rated on a five-point Likert scale (1 = never; 5 = almost always). An example item from this instrument is: *Do you feel that because of the time you spend with your relative that you don't have enough time for yourself?* Cronbach's alpha coefficient in the present sample was .93. A higher total score indicates greater caregiver burden.

2.4. VIA Inventory of Strengths (VIA-IS; Peterson and Seligman 2004; Peterson and Park 2009)

We used the 72-item Spanish version of this questionnaire (VIA-72), provided by the VIA Institute on Character. For each character strength there are three self-rated items that use a five-point Likert response format (1 = very much unlike me; 5 = very much like me). The score for each strength is the average across the three items (range 1–5). A higher score indicates a stronger endorsement of the strength in question. The 24 strengths are listed in Table 2, along with example items and the respective internal consistency coefficients.

3. Procedure

The study procedures were carried out in accordance with the Declaration of Helsinki, and the Experimentation Ethics Committee of the University of Malaga approved the study. The research team contacted different associations for families of people with Alzheimer's and other dementias in the province of Malaga and informed them about the study objectives and procedures. In those associations which agreed to participate, family members who were attending the association's day center were invited to take part in the study, and those who agreed completed the questionnaires (sociodemographic questionnaire, stress subscale of the DASS, ZBI, and VIA-IS) in a single session lasting around one hour. All participants signed informed consent forms,

which included a statement of study purpose, instructions, and confidentiality procedures.

4. Data Analysis

In order to analyse the relationship between caregiver burden and character strengths we calculated Pearson correlation coefficients between scores on the ZBI and scores for the 24 strengths assessed by the VIA-IS. Bonferroni correction was used to adjust the level of significance to $p = .002$. Following Cohen's criterion (1988) we considered a coefficient of $|.10|$ as a small correlation, $|.30|$ as moderate, and $|.50|$ or higher as a strong correlation.

In order to identify the predictors of caregiver burden we conducted multiple regression analysis. In the first stage, the following contextual variables and primary and secondary stressors were included as control variables in the regression model: MMSE score, Barthel Index, gender, age, marital status, relationship with the care recipient, level of education, employment status, religion, living with the care recipient, number of people with whom the caregiver lives and shares care tasks, whether the caregiver attends a support group, perceived financial difficulties, perceived limitation of leisure time, and perceived stress.

In the second stage, a regression modelling approach was used to include character strengths as predictors in the model. Since strengths are inter-correlated this approach allows us to identify what each strength adds to the explanation of caregiver burden. The predictors were added in descending order of their corresponding correlation coefficient, including in the modelling process those strengths whose correlation coefficient with caregiver burden was $|.20|$ or higher. The change in R^2 significance was tested when a predictor was added to the model, and a predictor was retained when the increment was significant.

Finally, in order to analyse the mediating and moderating effect of significant character strengths we used the approach to mediation and moderation described by Hayes (2018). This involved performing 10,000 bootstrap iterations to generate 95% confidence intervals for the indirect effect, using the PROCESS Macro 3.0 for SPSS. For this analysis we considered the significant contextual variables and stressors as predictors, the significant strengths as mediators/moderators, and caregiver burden as the dependent variable.

Results

Table 4 shows correlations between caregiver burden and character strengths. The results indicated that, after Bonferroni adjustment, caregiver burden was negatively and significantly correlated with four character strengths.

Regression modelling was performed to determine the predictors of caregiver burden. The first model included contextual variables and primary and secondary stressors as control variables. This model yielded an R^2 equal to .63, $p < .001$. We then tested models in which each of the character strengths yielding a correlation of at least $|\cdot 20|$ with the ZBI were entered in stepwise fashion as predictors. The predictors were added in descending order of their corresponding correlation coefficient, in accordance with Table 3. The second model therefore included control variables and hope. The increment in R^2 (ΔR^2) was equal to .02 and was statistically significant ($p = .03$), and hence hope was retained in the model. In the third model, control variables, hope, and social intelligence were entered as predictors. The ΔR^2 was equal to .001 and was not significant, and consequently social intelligence was removed from the model. We proceeded step by step, adding zest, love, forgiveness, curiosity, spirituality, gratitude, self-regulation, teamwork, creativity, and bravery to the second model. The ΔR^2 resulting from the addition of each of these strengths was smaller than .01 and was not significant, and thus none of them was retained. The selected model therefore included control variables and hope as a predictor of caregiver burden, with R^2 equal to .65, $F(22, 90) = 6.91$, $p < .001$. The residual of this model fulfilled the assumptions of linearity, normality, and homogeneity of variances. Table 5 shows the regression coefficients of the model.

To summarize the findings, the modelling process indicated that the significant control variables related to primary and secondary stressors were: (a) living with care recipient, such that caregivers who lived with the care recipient reported higher levels of burden; (b) perceived stress, which was positively related to caregiver burden; (c) perceived financial difficulties, such that caregivers who reported income inadequacy tended to experience higher levels of burden; and (d) perceived limitation of leisure time, such that caregivers who felt they did not have enough leisure time reported higher levels of burden. Regarding character strengths as predictors, the results indicated that the best predictor of caregiver burden was hope. When the other predictors were kept constant, the burden score decreased by 3.62 points for each increment in hope.

Table 4. *Correlations between character strengths (VIA scores) and caregiver burden (ZBI scores).*

Strengths	Caregiver burden
Hope	-.36*
Social Intelligence	-.31*
Zest	-.30*
Love	-.28*
Forgiveness	-.27
Curiosity	-.27
Spirituality	-.26
Gratitude	-.25
Self-Regulation	-.24
Teamwork	-.22
Creativity	-.20
Bravery	-.20
Perseverance	-.19
Appreciation of Beauty	-.18
Humor	-.17
Leadership	-.16
Judgment	-.16
Prudence	-.14
Fairness	-.09
Honesty	-.09
Kindness	-.09
Perspective	-.05
Humility	-.03
Love of Learning	-.02

Note. $N = 115$. * $p \leq .002$ (Bonferroni adjustment)

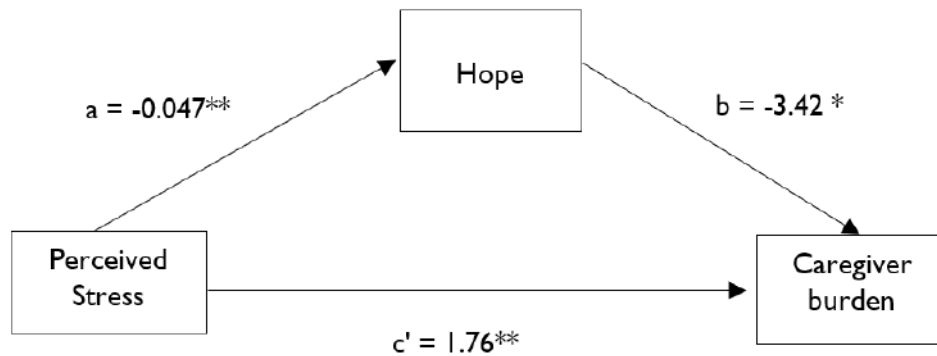
In order to examine the mediating/moderating effect of character strengths, we ran a mediation and moderator model with the statistically significant primary and secondary stressors as predictors (i.e., living with care recipient, perceived stress, perceived financial difficulties, and perceived limitation of leisure time), hope as a mediating/moderating variable, and caregiver burden as the dependent variable. The results showed that hope did not moderate these relationships. However, hope mediated the effect of perceived stress on caregiver burden (see Figure 2), with the other predictors being introduced as covariates. The value for the total effect of perceived stress on caregiver burden was 1.92 ($p < .001$), with a direct effect of 1.76 ($p < .001$) and an indirect effect through hope of .16, 95% CI [.01, .38].

Table 5. Regression coefficients (B), standard error (SE), and standardized regression coefficients (β) with caregiver burden as the dependent variable.

Predictor	B	SE B	β
Constant	41.41	17.6	
Hope	-3.62	1.62	-0.16*
Control variables			
Living with care recipient	6.39	3.13	0.16*
Perceived stress	1.68	0.25	0.49**
Perceived financial difficulties	3.79	0.99	0.30**
Perceived limitation of leisure time	8.50	2.84	0.23**
MMSE	-2.21	1.53	-0.12
Barthel Index	0.06	0.05	0.09
Gender	4.24	2.94	0.11
Age	0.00	0.17	0.00
Marital status. Single	-6.49	5.75	-0.14
Married	0.22	5.08	0.01
Divorced	-3.66	6.46	-0.05
Relationship with care recipient. Son/daughter	-7.09	4.95	-0.20
Spouse	-6.38	5.94	-0.17
Level of education	1.41	0.99	0.12
Employment status. Unemployed	7.82	4.04	0.21
Employed	5.55	4.33	0.17
Religion. Practicing Catholic	-4.31	5.01	-0.12
Non-practicing Catholic	-2.40	4.86	-0.07
Atheist/agnostic	-2.59	5.43	-0.06
Time as main caregiver	-0.41	0.32	-0.09
Number of people living with caregiver	-2.04	1.09	-0.17
Number of people sharing care tasks	1.22	0.98	0.09
Attends support group	-0.82	2.65	-0.02

Note. $N = 115$. Dichotomous variables: Living with care recipient: No (0), Yes (1); perceived limitation of leisure time: No (0), Yes (1); gender: Male (0), Female (1); Attends support group: No (0), Yes (1); Reference categories: Marital status: Widowed; Relationship to care recipient: Other; Employment status: Retired/not working due to disability; Religion: Other. ** $p < .01$; * $p < .05$

Figure 2. Mediation model with parameter estimation testing the mediating effect of hope (M) on the relationship between perceived stress (X) and caregiver burden (Y). ** $p < .01$, * $p < .05$



Discussion

The purpose of this study was twofold. First, we aimed to identify the character strengths associated with caregiver burden and to determine—after controlling for contextual variables and primary and secondary stressors—which of them are the best predictors of burden. We expected to find a negative correlation between caregiver burden and character strengths, especially hope and zest, which seem to be the most important character strengths in relation to emotional problems. Second, we sought to analyse the mediating/moderating effects of the significant character strengths on the relationship between contextual variables, primary and secondary stressors, and caregiver burden.

Regarding contextual variables and stressors, the regression analysis showed that the significant variables were: living with the care recipient, perceived stress, perceived financial difficulties, and perceived limitation of leisure time. Caregivers who lived with the care recipient, who scored higher on perceived stress, who reported income inadequacy, and who felt they had insufficient leisure time tended to experience higher levels of burden. These results are consistent with the stress process model (Pearlin & Bierman, 2013; Pearlin et al., 1990), and with previous research identifying significant predictors of caregiver burden (Huang et al., 2012; Kim et al., 2012; Park et al., 2015; Sun et al., 2009). They are also in line with the study by Sun et al. (2009), who found that perceived income inadequacy was a stronger predictor of self-reported depressive symptomatology and anxiety in Alzheimer's caregivers and that it explained greater variance than did household income. These authors concluded that within the framework of the stress process model, financial strain was one of the main stressors

disrupting the caregiver's life. This stressor should therefore be assessed when developing intervention programs with main caregivers of patients with dementia.

Regarding character strengths, simple correlation analysis showed a negative pattern of correlation, supporting the idea that more negative life experience is related to lower scores on these character strengths. In line with what we expected, hope and zest, as well as social intelligence and love, yielded significant and moderate correlation coefficients (after Bonferroni adjustment), indicating that caregivers who experience lower burden tend to be more optimistic about the future, to approach life with excitement and energy, to value close relationships with others, and to be aware of their own motives and feelings and those of other people. Of these character strengths, regression modelling indicated that hope was the most important predictor of burden.

Regarding the mediating/moderating effects of the significant character strengths, the results indicated that hope did not moderate the relationship between stressors and burden. However, when we tested the indirect effects we found that hope mediated the relationship between perceived stress and caregiver burden. This finding is consistent with the stress process model, which suggests that psychological values may buffer the outcomes of mental health (Pearlin & Bierman, 2013; Pearlin et al., 1990).

Hope, also referred to as optimism, future-mindedness, or future orientation, appears in the VIA classification under the virtue of transcendence and is defined by Park et al. (2004) as expecting the best in the future and working to achieve it and/or believing that a good future is something that can be brought about. Thus, hope represents a cognitive, emotional, and motivational stance toward the future, such that the individual expects that desired events will occur, acts in ways believed to make them more likely, and feels confident about reaching goals (Peterson & Seligman, 2004).

Our results are consistent with research showing that hope plays a significant role in emotional adjustment. Several studies have demonstrated that higher levels of hope are associated with fewer internalizing problems such as depression and anxiety disorders, that hope is a good predictor of well-being, life satisfaction, and happiness, and that it helps to foster good coping skills (Kwon et al., 2015; Lee et al., 2015; Martínez-Martí & Ruch, 2014; Niemiec, 2013; Ovejero et al., 2016; Park et al., 2004; Park & Peterson, 2008; Proyer et al., 2011; Zhou et al., 2013). Other researchers have found that hope is negatively associated with burnout (Vetter et al., 2018), that it is an adaptive

factor for older adults, due to its association with resilience (Polson et al., 2018), and that it plays an important role in successful coping with illness and in improving the quality of life of ill individuals (Duggal et al., 2016; Rousseau, 2000). Positive results have also been obtained with adolescents and children. Hopeful students showed fewer symptoms of depression (Snyder et al., 2003), less psychological distress and school maladjustment (Gilman et al., 2006), and higher levels of self-esteem, well-being, and life satisfaction (Blanca et al., 2018; Snyder et al., 2003; Yang et al., 2016). This suggests that hope plays a key role in emotional adjustment across the lifespan.

Our findings also indicate that a high level of perceived stress is related to decreased hope, and that this lower level of hope is one of the paths through which stress may cause caregiver burden. Consequently, a more optimistic view of the future and the ability to see oneself as working to achieve one's goals may help caregivers to deal with the perceived negative impact of caregiving tasks. Conversely, a caregiver who feels burdened may view the future as devoid of hope and function poorly in terms of goal orientation. Hope-based intervention programs could therefore be useful for improving quality of life and reducing burden among caregivers. In our view, cognitive-behavioural interventions may be particularly well suited to this purpose, due to the strong emphasis they place on goal setting, strategy generation, and the modification of negativistic beliefs regarding goal attainment (Snyder et al., 2000). Snyder et al. (2000) and Snyder (2002) propose that hope has two goal-directed components: pathways thoughts, reflecting the perceived ability to generate plausible goal routes, and agency thoughts, referring to the motivation and determination to achieve one's goals. Cognitive-behavioural interventions based on hope can help individuals to envision alternative pathways when an existing route is blocked, or to increase the number of possible pathways for achieving their specific goals (Snyder et al., 2000).

We also consider that any such intervention should include specific activities designed to develop hope and promote positivity, as these could help caregivers to deal with the stress they perceive. A number of proposals have been made in this regard. For example, Rustøen et al. (2011) described a hope intervention (the HOPE-IN) for cancer patients, combining cognitive, affective, and behavioural techniques. They found that the HOPE-IN increased levels of hope and decreased levels of psychological distress. Similarly, Herth (2000) developed the Hope Intervention Program for patients with a first recurrence of cancer, including several activities centered on four attributes of hope

(experiential, relational, spiritual, and rational thought processes): Searching for hope (e.g., becoming aware of and expressing fears, questions, expectations and hopes, and identifying areas of hope and threats to hope); connecting with others (e.g., family members are invited, while participants explore ways to establish a sense of connectedness with others and to identify available resources); expanding the boundaries (e.g., thinking about suffering and the meaning of life, and finding sources of strength); and building the hopeful veneer (e.g., learning strategies and techniques about cognitive reframing, or goal readjustment to enhance hope). Herth (2000) found that this program increased hope and quality of life in cancer patients, both immediately after the intervention and during follow-up at 3, 6, and 9 months.

Although the abovementioned interventions were developed to enhance hope among cancer patients, the positive activities they use may be adapted to the caregiver setting and to the specific needs of individual carers. Overall, a hope-based program might help caregivers to cope more effectively by fostering in them greater optimism about the future and enhancing their capacity for goal-directed behaviour. This could be achieved through activities that help them to become more aware of their feelings related to caregiving, to express optimism, to reflect on their own strengths, to identify objectives and goals, to implement strategies for achieving them, and to be more confident about their ability to put these into practice. In accordance with the positive-activity model (Lyubomirsky & Layous, 2013) these activities would involve the activation of positive emotions, positive thoughts, and positive behaviour, and they would help caregivers to satisfy their basic psychological needs, thus boosting their well-being.

The present study has several limitations which need to be acknowledged. First, the data were obtained using self-report questionnaires. Second, participants were recruited by means of convenience sampling through several associations for families of people with Alzheimer's and other dementias, thereby restricting the generalizability of the findings. Third, caregivers who scored high on hope may be more likely to self-select into being caregivers, which may bias the sample. Fourth, the use of a cross-sectional design means that no causal relationships can be inferred from the results. Further studies are therefore needed to ascertain causality.

To sum up, our study provides evidence of the relationship between caregiver burden, contextual variables, stressors, and character strengths. Overall, the results

showed that the caregivers who experience the greatest burden are those who live with the care recipient, who score higher on perceived stress, who feel their leisure time is limited, and who perceive more financial strain. We also found that caregivers who report less burden tend to score higher on hope, zest, social intelligence, and love. However, a more refined analysis indicated that hope was the best predictor of caregiver burden and that hope mediated the relationship between perceived stress and caregiver burden. These results may have both clinical and research implications. Regarding the former, the fact that higher levels of hope are related to lower levels of burden suggests that hope-based programs could enhance positive emotions and reduce the perceived negative impact of caregiving. The finding that hope has a mediating effect on the relationship between perceived stress and caregiver burden also opens up a new line of research regarding the role of character strengths in the stress process model. Future studies should therefore examine the role of hope and other character strengths in this model, analysing their direct and/or mediating effects on the relationship between stressors and other health outcomes.

2.3. The Role of Character Strengths in Predicting Gains in Informal Caregivers of Dementia

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Abstract

Objectives: Although providing care to a person with dementia can have a negative impact, caregivers may also perceive certain benefits and gains through the tasks they perform. Our aim here was to study caregiver gains within the framework of positive psychology, exploring the predictive power of character strengths, while controlling for sociodemographic variables and variables related to the dementia and caring.

Methods: A sample of 105 main caregivers of people diagnosed with dementia completed a sociodemographic questionnaire, the Gain in Alzheimer care Instrument and the Values in Action Inventory of Strengths. Correlational analysis and hierarchical regression were conducted.

Results: Eighteen character strengths were positively and significantly correlated with gain scores. Regression analysis indicated that level of education was negatively related to gain scores. In addition, hope was the character strength which best predicted the gain score, such that caregivers who scored higher on hope tended to perceive greater benefits from their role.

Conclusion: The results suggest that hope may play an important role in relation to the perceived gains of caregiving. Intervention programmes based on positive psychology and aimed at enhancing character strengths, especially hope, could help caregivers to identify the positive aspects of their caring role.

Keywords: Caregiver; VIA; GAIN; virtues; positive psychology.

Introduction

A caregiver is the person responsible for providing care to someone whose health is impaired by sickness or old age (Settineri, Rizzo, Liotta, & Mento, 2014). This task often falls to informal caregivers, that is, the impaired person's partner, relatives or friends, who offer unpaid assistance with activities of daily living.

The negative aspects of providing informal care to a person with dementia are well known and have been widely reported in the caregiving literature (e.g. Chiao, Wu, & Hsiao, 2015). By contrast, fewer studies have examined the positive aspects of caregiving. Empirical evidence shows that the caregiving role may increase personal satisfaction and growth, enable the development of skills, and improve relationships with the care recipient and others (Rapp & Chao, 2000). Kramer (1997a) used the term gain to refer to the extent to which the caregiving role is perceived as enhancing an individual's life space and as being enriching, including any positive affective or practical benefits that are experienced as a result of becoming a caregiver.

Cohen, Colantonio, and Vernich (2002) found that 73% of informal dementia caregivers identified at least one positive aspect of their caregiving role, the most cited being companionship, a feeling of fulfilment or reward, enjoyment and carrying out a duty. In addition, more positive feelings about caring were associated with lower caregiver burden, less depression and better self-rated health.

Netto, Goh, and Yap (2009) suggested three main categories of gains derived from the caregiver role: personal growth, which refers to internal changes such as increased self-awareness and becoming more patient, understanding, resilient, and knowledgeable; gains in relationships, which are related to improved skills in interacting with the care recipient and other people (family, elderly people, etc.); and higher-level gains, such as a stronger sense of spirituality, a deeper relationship to God, or a more enlightened perspective in life. Based on these categories, Yap et al. (2010) designed the Gain in Alzheimer care INstrument (GAIN) to measure the benefits of caring for a person with dementia. In our country, Spain, this scale has been validated with informal caregivers of people with dementia (Fabà & Villar, 2013).

Although some researchers have failed to find evidence of a relationship between GAIN scores and several sociodemographic and care variables (Fabà & Villar, 2013), Liew et al. (2010) found that GAIN scores were higher among those caregivers who did not work, who had been caregivers for more than three years, who spent more than 60% of their time per week on caregiving tasks, who had daily contact with the patient, who had few or no financial difficulties, and who attended caregiver educational and support group programmes. Additionally, it seems that caring for a patient in the more advanced stages of dementia also confers greater gains. Liew et al. (2010) suggested that

more frequent or close contact with the person with dementia offers caregivers increased opportunities to feel empowered, insofar as they may develop effective strategies for providing care.

The empirical evidence has also shown that GAIN scores are positively related to well-being, a sense of caregiver competence, the use of caregiving strategies focused on encouragement and active management, and religiosity (measured on a scale from no faith to very strong faith); conversely, gain scores are inversely associated with caregiver burden, depression, mental health problems, and criticism as a caregiving strategy (Cheng, Lam, Kwok, Ng, & Fung, 2013; Fabà & Villar, 2013; Liew et al., 2010; Yap et al., 2010). Although they did not measure gains with the GAIN, Fabà, Villar, and Giuliani (2017) found that caregiver gains were negatively associated with caregiver burden and depression, and positively related with satisfaction with life, suggesting that informal dementia caregivers who experience more gains have a lower level of caregiver burden and are more satisfied with their lives.

Gains as a positive aspect of caring could be studied within the framework of positive psychology, a field of psychology which focuses on analysing the factors that encourage people, communities and societies to flourish (Seligman & Csikszentmihalyi, 2000). Noteworthy in this context is the classification of character strengths developed by Peterson and Seligman (2004). Character strengths are positive psychological traits that can be observed in thoughts, feelings, conations, and behaviours. Although they are relatively stable over time, they may change as a result of interventions or important events. These characteristics have a moral value and confer benefits both to the individual concerned and to others (Niemiec, 2013; Park, Peterson, & Seligman, 2004).

Peterson and Seligman (2004) developed a classification of 24 character strengths, organizing them in six blocks of virtues: wisdom and knowledge, courage, humanity, justice, temperance, and transcendence. This classification, which they called Values in Action (VIA), considers the following strengths: creativity, curiosity, judgment, love of learning, perspective, bravery, honesty, perseverance, zest, love, kindness, social intelligence, teamwork, fairness, leadership, forgiveness, humility, prudence, self-regulation, appreciation of beauty, gratitude, hope, humor, and spirituality. Peterson and Seligman (2004) also developed an instrument to measure these 24 character strengths, the VIA Inventory of Strengths.

The empirical evidence has shown that higher scores on character strengths are associated with positive outcomes such as happiness, life satisfaction, positive affect, health, adaptive coping, emotional intelligence, academic achievement, and job satisfaction, and conversely that they are negatively related to psychological maladjustment, including depression, anxiety, stress, and negative affect (Azañedo, Fernández-Abascal, & Barraca, 2014, 2017; Blanca, Ferragut, Ortiz-Tallo, & Bendayan, 2018; Harzer & Ruch, 2015; Kim et al., 2018; Niemiec, 2013; Ovejero, Cardenal, & Ortiz-Tallo, 2016; Ros-Morente, Alsinet-Mora, Torrelles-Nadal, Blasco-Belled, & Jordana-Berenguer, 2017; Tehranchi, Neshat Doost, Amiri, & Power, 2018). Hope, zest, gratitude, love and curiosity are the strengths most strongly associated with happiness and well-being (Park et al., 2004; Ovejero et al., 2016). Given that gains are related to the positive aspects of caregiving, it is plausible that character strengths are also linked to gains in informal dementia caregivers, such that the stronger the endorsement of character strengths the more gains the caregiver perceives. However, to the best of our knowledge, there are no previous studies that have examined this issue.

Our goal, therefore, was to explore the predictive power of character strengths in relation to caregiver gains in informal dementia caregivers, controlling for other variables that might influence this relationship, namely caregiver sociodemographic variables and variables related to the dementia and caring. Knowledge about which character strengths are more likely to predict gains in dementia caregivers could be used to design positive intervention programmes aimed at improving the caregiving experience.

Design and Methods

1. Participants

One-hundred and five main caregivers (22 males and 83 females) of people diagnosed with dementia participated in the study. They ranged in age from 35 to 82 years ($M = 56.12$, $SD = 12.67$) and were recruited through 11 different associations for families of people with Alzheimer's and other dementias in the province of Malaga, Spain. Participants had to meet the following inclusion criteria: (1) age 18 years or older; (2) having been the main caregiver for at least six months; (3) care recipient has a diagnosis of dementia; (4) belonging to one of the abovementioned associations; and (5) giving their prior informed consent. The majority of participants were Spanish (97.1%), married

(73.3%), Catholic (78.1%), lived with the care recipient (79%), were the son or daughter of the care recipient (66.7%), and did not attend a support group (72.4%). Forty-four percent of participants were employed. Regarding their level of education, 8.6% had received no or very limited schooling, 32.4% had completed primary school, 23.8% secondary school, and 35.2% had university qualifications. The time during which they had been the main caregiver ranged from 1 to 28 years ($M = 4.93$, $SD = 3.88$). Care recipient scores on the Barthel Index ranged from 0 to 100 ($M = 63.89$, $SD = 29.20$).

2. Instruments

2.1. Sociodemographic Questionnaire

This questionnaire gathered sociodemographic information and data about caregiving and dementia-related variables. All these variables were included in the analysis as control variables, covering the following aspects: gender, age, marital status, level of education, employment status, religion, religiosity (measured on a six-point scale from no faith to very strong faith), relationship to the care recipient, whether or not the caregiver lived with the care recipient, time as main caregiver, whether or not the caregiver attended a support group, whether or not the caregiver perceived financial difficulties (measured on a six-point scale from no difficulty to very difficult), and activities of daily living of the care recipient, measured by the Barthel Index.

2.2. Gains

Gains associated with caring for the person with dementia were assessed using the Gain in Alzheimer care INstrument (GAIN; Yap et al., 2010), in its Spanish version (Fabà & Villar, 2013; Ponsoda, 2015). The scale includes 10 items rated on a five-point Likert scale and covering three kinds of benefits: personal growth, gains in relationships and higher-level gains. The GAIN comprises a single factor and a total score is obtained by summing the scores for each item. Cronbach's alpha coefficient in the present sample was .88. Higher scores are indicative of more perceived gains from caregiving tasks.

2.3. VIA Inventory of Strengths (VIA; Peterson & Seligman, 2004; Peterson & Park, 2009)

The 24 character strengths listed above in the introduction were assessed using the 72-item Spanish version of this questionnaire (VIA-72), provided and validated by the VIA Institute on Character. Each strength (creativity, curiosity, judgment, love of learning, perspective, bravery, perseverance, honesty, zest, love, kindness, social

intelligence, teamwork, fairness, leadership, forgiveness, humility, prudence, self-regulation, appreciation of beauty, gratitude, hope, humor, and spirituality) has three self-rated items that use a 5-point Likert response format (1 = very much unlike me; 5 = very much like me). The score obtained for each strength is the average across the three items (range 1 to 5). In the present sample internal consistency coefficient ranged from .45 to .84. Higher scores are indicative of a stronger presence of the specific strength.

3. Procedure

The research team contacted several associations for families of people with Alzheimer's and other dementias in the province of Malaga, informing them about the study. Once the centre agreed to collaborate, caregivers were invited by their own centre to participate, and those who accepted received the questionnaires. The response rate for the study was 65.6%. Participants completed the questionnaires in a single one-hour session, after signing informed consent. The Experimentation Ethics Committee of the University of Malaga approved the study, which was carried out in accordance with the Declaration of Helsinki.

4. Data Analysis

In order to reduce the number of predictors and to select only those which were statistically significant for the next step (due to the number of predictors and the limited sample size), we began by analysing the association between GAIN scores and the sociodemographic variables and dementia- and caring-related variables. We performed a multiple regression analysis with gender, age, marital status, level of education, employment status, religion, religiosity, relationship to the care recipient, living with the care recipient, time as main caregiver, Barthel index, attending a support group and perceived financial difficulties as predictors.

Second, we calculated Pearson correlation coefficients in order to analyse the relationship between GAIN scores and scores on character strengths. According to Cohen's criterion (Cohen, 1988), a coefficient of $|.10|$ is considered a small correlation, $|.30|$ a moderate correlation and $|.50|$ or higher a strong correlation.

Third, and in order to identify which character strengths were predictors of GAIN scores, we performed a hierarchical regression analysis, introducing the

predictors in two blocks. In the first block we included the significant predictors related to sociodemographic and dementia- and caring-related variables. In the second block we added those character strengths which showed a significant correlation with GAIN scores. All significant correlation values were higher than .20.

A power analysis indicated that for a multiple regression analysis with 19 predictors a sample of 99 participants would be needed to detect an effect of 0.25 with 80% statistical power and an alpha level of .05. Also as regards sample size, recent Monte Carlo simulation studies have shown that linear regression models require only two subjects per variable for adequate estimation of regression coefficients and standard errors (Austin & Steyerberg, 2015).

Results

Table 6 shows the standardized coefficients of the multiple regression analysis with the predictors related to the sociodemographic and dementia- and caring-related variables and with gain scores as the dependent variable. The only statistically significant variable was level of education, which was negatively correlated with gain scores.

Table 6. Standardized regression coefficients from the multiple regression analysis with GAIN scores as the dependent variable and sociodemographic variables and dementia- and caring-related variables as predictors.

Variables	Beta	t	P
Gender (Female)	-0.17	-1.60	.11
Age	-0.04	-0.21	.83
Marital status (Married)	0.11	1.10	.28
Level of education	-0.31	-2.56	.01
Employment status (Employed)	0.08	0.68	.50
Religion (Catholic)	0.06	0.53	.60
Religiosity	0.12	1.01	.31
Relationship to care recipient (Son/Daughter)	-0.02	-0.11	.91
Living with care recipient (Yes)	-0.11	-1.05	.30
Time as main caregiver	0.10	1.01	.32
Barthel Index	-0.03	-0.24	.81
Attending support group (Yes)	-0.01	-0.02	.98
Perceived economic difficulties	-0.12	-1.09	.28

Note. $N = 105$. Coding: Gender: Female (1), Male (0); Marital status: Married (1), other (0); Employment status: Employed (1), unemployed (0); Religion: Catholic (1), other (0); Relationship to care recipient: Son/Daughter (1), other (0); Living with care recipient: Yes (1), No (0); Attending support group: Yes (1), No (0).

Table 7 shows the correlation coefficients between caregiver gains and the 24 character strengths. Eighteen character strengths were positively and significantly correlated with gain scores, and these were the strengths entered in block 2 of the hierarchical regression.

Table 7. Correlations between GAIN scores and each of the 24 character strengths (VIA scores).

Strengths	Correlation
Hope	.51**
Gratitude	.42**
Zest	.39**
Teamwork	.39**
Love	.37**
Curiosity	.33**
Creativity	.31**
Judgment	.29**
Leadership	.29**
Social Intelligence	.28**
Spirituality	.27**
Forgiveness	.27**
Appreciation of Beauty	.27**
Kindness	.25**
Prudence	.25**
Bravery	.24*
Humor	.24*
Honesty	.23*
Self-Regulation	.17
Humility	.16
Perspective	.12
Fairness	.08
Perseverance	.06
Love of Learning	.02

Note. $N = 105$. ** $p < .01$; * $p < .05$

Table 8. Standardized regression coefficients from hierarchical regression analysis, R-squared and increment in R-squared with GAIN scores as the dependent variable.

Variables	Stage 1	Stage 2	F	R ²	ΔR^2
Block 1. Control variables			8.37**	.08	
Level of education	-.27**	-.31**			
Block 2. Character strengths			3.15**	.41	.33*
Hope		0.45**			
Gratitude		0.10			
Zest		0.05			
Teamwork		0.07			
Love		0.03			
Curiosity		0.03			
Creativity		-0.18			
Judgment		0.22			
Leadership		0.15			
Social Intelligence		-0.10			
Spirituality		0.15			
Forgiveness		-0.02			
Appreciation of Beauty		-0.20			
Kindness		-0.16			
Prudence		-0.10			
Bravery		0.07			
Humor		0.05			
Honesty		0.07			

Note. $N = 105$. * $p < .05$, ** $p < .001$

Table 8 shows the results of the two stages of the hierarchical regression analysis. In the first block we included level of education. In the second block we included the character strengths that yielded a significant correlation with gain scores. The increment

in *R*-squared was statistically significant. In the final stage the significant predictors were level of education and hope.

Discussion

The aim of this study was to explore the predictive power of character strengths in relation to caregiver gains, controlling for other variables that might influence this relationship. We began by analysing the association between GAIN scores and sociodemographic variables and dementia- and caring-related variables. Then, in order to analyse the relationship between caregiver character strengths and gains, we performed a simple correlation analysis between GAIN scores and scores on the 24 strengths. Finally, we performed a hierarchical regression in order to identify which character strengths were predictors of caregiver gains, controlling for the abovementioned variables.

Regarding sociodemographic variables and dementia and caring-related variables, the results showed that the only significant variable was level of education, which was negatively correlated with gain scores. Thus, caregivers with a lower level of education tended to perceive greater benefits from caregiving. This negative association has also been found in previous research (Kramer, 1997b; Picot, 1995). In addition, a lower educational level has been associated with lower levels of caregiver stress (DiBartolo & Soeken, 2003). Kramer (1997b) suggested that highly educated people may perceive a more striking status differential between their role as a professional and their role as caregiver. It is also possible that highly educated caregivers are accustomed to being engaged in more intellectually stimulating activities, which may make it difficult for them to perceive benefits in daily caring tasks (Kramer, 1997b). These results suggest that intervention programmes should specifically target caregivers with a high educational level so as to help them identify gains and reduce the stress they experience as a result of their caregiving tasks.

The results of the simple correlation analysis showed that 18 strengths were positively and significantly correlated with GAIN scores, and seven of them (hope, gratitude, zest, teamwork, love, curiosity, and creativity) yielded moderate or high correlation values (above .30). Overall, these results are consistent with our expectation that the stronger the endorsement of strengths the more the caregiver would perceive positive aspects related to caregiving.

The results from the hierarchical regression analysis, which eliminates the overlap among predictors, indicated that the only significant predictor of gain scores was hope, with a positive relationship. Park et al. (2004) define hope as expecting the best for the future and working to accomplish it. Hopeful people are optimistic, believe that things could be better, and usually focus on opportunities and on the bright side of life. Consequently, caregivers with this positive outlook also tend to focus on the positive opportunities that caregiving offers them in terms of personal growth and gains. This is consistent with the findings of several studies about character strengths that have highlighted the important role of hope, which has been positively related to well-being and happiness (Blanca et al., 2018; Niemiec, 2013; Niemiec, Shogren, & Wehmeyer, 2017; O'Sullivan, 2011; Ovejero et al., 2016; Park & Peterson, 2009; Peterson, Ruch, Beerman, Park, & Seligman, 2007), life purpose (Lee, Foo, Adams, Morgan, & Frewen, 2015), self-compassion (Yang, Zhang, & Kou, 2016), academic achievement (Niemiec, 2013; Park & Peterson, 2009), self-esteem (Ciarrochi, Heaven, & Davies, 2007), positive attributional style (Ciarrochi et al., 2007), and self-efficacy and eustress (O'Sullivan, 2011). Furthermore, hope has been shown to be negatively associated with psychological problems such as anxiety and depression (Niemiec, 2013; Park & Peterson, 2008; Rajandram et al., 2011), burnout (Vetter, Vetter, & Fowler, 2018), and school maladjustment and psychological distress (Gilman, Dooley, & Florell, 2006; Niemiec, 2013). It has been suggested that hope can buffer the negative effects of trauma and stress (Niemiec, 2013; Park & Peterson, 2009), and it appears to be a key cognitive-motivational construct in the development of a positive psychological outlook among youth (Valle, Huebner, & Suldo, 2006).

In the context of hope theory, Snyder (2004) has also highlighted the importance of hope in predicting positive outcomes in health, education and sport. From this perspective, hope is the perceived capacity to achieve goals and to generate plausible routes for doing so (pathways thinking), which implies also the motivation and energy to use those pathways towards a goal (agency thinking) (Snyder, 2002; Snyder et al., 2000). Research has found that high-hope people tend to deal with stressors more effectively, to produce more pathways and to be better at generating alternative routes (Snyder, 2000). Furthermore, high hope people are more likely to have close connections with other people and to show more interest in the goals of others (Snyder, Cheavens, & Simpson, 1997). Given these findings, it is reasonable to assume that high-hope

caregivers may have more confidence in their abilities and may generate more strategies for coping effectively with stressors associated with caring, resulting in a more positive view of the future.

The present results suggest that intervention programmes based on positive psychology and aimed at enhancing character strengths could help caregivers to identify the positive aspects of caring. A key strength to target in the context of such programmes would be hope, the consolidation of which could help to boost caregiver gains. Indeed, expecting the best for the future and being able to work towards goals may enable caregivers to recognize potential benefits of their role. In this context, the aforementioned hope theory (Snyder, 2000, 2002; Snyder et al., 2000) may also provide a framework for the design of intervention programmes aimed at increasing pathways thinking and enhancing motivation to achieve desired goals.

This study has a number of limitations that need to be considered. First, participants were recruited through associations for families of people with dementia, restricting the generalizability of the results. Second, although recent studies have shown that linear regression models require only two subjects per variable for adequate estimation of regression coefficients (Austin & Steyerberg, 2015), we believe that the sample size used in this study is small and may also limit the generalizability of results. A further limitation relates to the correlational nature of the data, which prevents us from making inferences about causal relationships.

To sum up, the present study explores the relationship between character strengths and caregiver gains, providing evidence about the existence of a positive association with the majority of the strengths considered. More specifically, hope is the strength with the greater predictive power in relation to caregiver gains. The results show that caregivers who scored higher on hope tend to perceive more benefits from their caregiving tasks. This suggests that intervention programmes based on positive psychology and aimed at enhancing strengths, especially hope, could help caregivers to identify the positive aspects of the caring role.

2.4. Life satisfaction and the mediating role of character strengths and gains in informal caregivers

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Accessible summary

- What is known on the subject? The role of informal caregiver can have both negative and positive consequences for a person's well-being. The main theoretical framework for explaining these consequences is the stress process model, which considers contextual variables, stressors and mediating/moderating factors. The latter are psychosocial factors such as coping strategies, personal mastery, social support, or beliefs and values which may influence caregiver well-being. The perception of gains in caregiving has also been proposed as a mediating variable since it may act as a coping strategy. However, few studies have examined values and perceived gains as mediating variables with life satisfaction as the outcome.
- What the paper adds to existing knowledge. This study explores the role of character strengths and caregiver gains as mediators between stressors and life satisfaction in informal caregivers of persons with dementia. The results identify hope as a key character strength, its lack being one pathway through which stress may lead to low life satisfaction and low perceived gains from caregiving.
- What are the implications for practice? Caregivers who experience a lack of hope may be less able to generate goals and be less motivated to achieve them. Our findings are relevant to gerontological nursing based on the Senses Framework as they confirm the importance of the senses of purpose and achievement. Nursing and care staff can play an active role in helping informal caregivers to meet their goals by promoting these two senses, thereby fostering a more positive caregiving experience.

Abstract

Introduction: Being an informal caregiver can have both negative and positive consequences for well-being. Within the framework of the stress process model, few studies have examined values and perceived gains of caregiving as mediating variables of life satisfaction.

Aim: To explore the role of character strengths and perceived gains as mediators in the association between life satisfaction and primary and secondary stressors in informal caregivers of persons with dementia.

Method: Participants were 112 informal caregivers. Hierarchical regression, correlation and mediation analyses were performed.

Results: Lower life satisfaction was associated with being female, unmarried, caring for someone with greater cognitive impairment, a higher level of stress, having restricted leisure time and perceiving financial difficulties. Hope mediated the associations between perceived stress and both life satisfaction and perceived gains of caregiving.

Discussion: Hope is a key strength and its lack is one pathway through which stress may cause low satisfaction and low perceived gains from caregiving.

Implications for practice: Without hope, it is difficult for caregivers to generate goals and be motivated to achieve them. Nursing and care staff should aim to promote a sense of purpose and achievement among informal caregivers so as to foster a more positive caring experience.

Keywords: Hope; Perceived stress; Stress process model; Indirect effect; Love; Senses Framework.

Relevance Statement

This paper provides evidence of the impact on well-being of caring for a person with dementia, as well as the psychological resources that mediate the relationship between well-being and stressors. Although perceived gains of caregiving and character strengths have been proposed as mediating variables, their precise contribution remains unknown. We identified hope as a key character strength, highlighting its mediating role in the relationship between perceived stress and life satisfaction and perceived benefits of caregiving. By promoting a sense of purpose and achievement among informal caregivers, nursing and care staff could help to foster a more positive caring experience.

Introduction

Dementia is characterized by a progressive global deterioration in cognitive ability and the capacity for independent living. It affects different cognitive functions, including memory, learning, orientation, language, comprehension and judgement, and it generally affects older adults (Prince & Jackson, 2009; Alzheimer's Association, 2016). Most people

with dementia require some form of personal care as the disease progresses (Prince & Jackson, 2009; Prince et al., 2013).

An informal caregiver is an unpaid person, usually a friend or relative, who assists another person with reduced health to fulfil his or her needs. The role of caring for a person with dementia can have several negative consequences, including burden, depression, anxiety, stress, social isolation, decreased well-being and quality of life, sleep difficulties and a heightened risk of cardiovascular disease (Conde-Sala et al., 2010; Kim et al., 2012; Raivio et al., 2015; Roepke et al., 2012; Settineri et al., 2014). Because dementia-related symptoms worsen progressively over time, informal caregivers will have to assume increased responsibility as the person with dementia deteriorates, and as a result they are likely to experience increased stress and burden (Chiao et al., 2015). Research also suggests, however, that informal caregiving may have positive consequences and benefits, such as finding meaning through care, increased life satisfaction, personal and spiritual growth, and improved interpersonal relationships (Cheng et al., 2013; Netto et al., 2009; Rapp & Chao, 2000; Sanders, 2005). In this context, the term *gains* refers to positive appraisals experienced as a result of the caregiving role (Kramer, 1997).

The main theoretical framework for explaining the consequences of the caregiving experience is the stress process model (Pearlin et al., 1990; Pearlin & Bierman, 2013). This model considers various factors which may interact and determine how a person reacts to this role. These are as follows: 1) contextual factors, such as the caregiver and care recipient's sociodemographic characteristics (e.g. gender, age or educational level), or variables related to caregiving (e.g. how long a person has fulfilled this role); 2) primary stressors, which refers to stress factors directly related to the health of the care recipient and the degree of the care needed, which may be objective (e.g. cognitive impairment or challenging behaviour) or subjective (e.g. perception of overload); 3) secondary stressors, that is, stress factors beyond the caregiving role, such as restriction of social life, difficulties at work or financial strain; and 4) mediating and moderating factors that can determine how well caregivers cope with their role and which may account for variability in the health consequences they experience. Among the latter, Pearlin and Bierman (2013) include factors such as coping strategies, personal mastery, social support, beliefs and values. Contextual variables, stressors, and

mediators and moderators may influence health outcomes such as well-being, depression, anxiety, burden, etc.

The direct relationship between contextual factors, stressors and health outcomes has been widely studied in informal caregivers of persons with dementia. For example, greater caregiver burden has been related to being female, older and a spousal caregiver, having a lower educational level, having spent longer in the caregiving role, living with the care recipient, not having assistance (Chiao et al., 2015; Kim et al., 2012), a more advanced stage of disease and more behavioural problems in the care recipient, and factors such as lower income, economic difficulties and restriction of leisure time (Chiao et al., 2015; Del-Pino-Casado & Ordóñez-Urbano, 2016; Park et al., 2015; Sun et al., 2009). Research also shows that caregiver burden is positively associated with depression and anxiety (Chiao et al., 2015), which in turn are negatively related to self-rated health, perceived gains of caregiving, quality of life, life satisfaction and well-being (Abdollahpour et al., 2014; Chappell & Reid, 2002; Fabà et al., 2017; Yap et al., 2010). In addition, lower life satisfaction in caregivers has been linked to being female, unmarried, unemployed, dedicating more hours to care, limited social activity, low income, low social support and social resources, low self-esteem, higher stressfulness appraisals, fewer perceived benefits associated with caregiving and more personal health problems (Borg & Hallberg, 2006; Chappell & Reid, 2002; Fabà et al., 2017; Haley et al., 2003; Niimi, 2016; Wakabayashi & Kureishi, 2018).

Research with informal caregivers of people with dementia has also examined the mediation/moderation effects of several variables (e.g. religiosity, self-efficacy, personal mastery, social support and coping styles) in relation to mental and physical health (McLennon et al., 2011), depression (Cheng et al., 2013; Mausbach et al., 2012) and caregiver burden (García-Castro et al., 2020; Fauziana et al., 2018; Wang et al., 2018). As already mentioned, these mediators and moderators would explain individual differences in how caregivers cope with their role (Pearlin & Bierman, 2013). However, although there is abundant evidence in relation to coping, social support or mastery, little is known about the role of beliefs and values as mediating/moderating variables in the relationship between stressors and health outcomes. Regarding values, Pearlin and Bierman (2013) suggest that the influence of a stressor may vary according to whether or not it is relevant to a person's values. In this context, the Values in Action (VIA) classification proposed by Peterson and Seligman (2004) provides a framework for

analysing the role of values from the perspective of positive psychology (García-Castro et al., 2020). The VIA classification identifies several character strengths or positive personality traits that determine how individuals think, feel and behave. According to Peterson and Seligman (2004), these character strengths are measurable and relatively stable over time, although they are also flexible enough to be developed. These authors identified 24 character strengths, which they labelled as follows: appreciation of beauty and excellence, creativity, bravery, fairness, curiosity, gratitude, forgiveness, hope, honesty, humor, humility, kindness, judgment, love, leadership, love of learning, perspective, perseverance, self-regulation, prudence, spirituality, social intelligence, teamwork, and zest. Overall, research has shown that higher levels of character strengths are linked to lower levels of perceived stress, and also that strengths may function as a protective factor against perceived stress (Duan, 2016; Li et al., 2017). In this context, the endorsement of character strengths may determine how individuals react to the caregiving role, mediating the relationship between stressors and health outcomes, such that individuals who endorse certain character strengths may be able to deal more effectively with care-related stressors. A recent study by García-Castro et al. (2020) found that of the 24 strengths, hope was the most relevant in predicting caregiver burden and that it had a mediating role between perceived stress and burden, such that higher levels of perceived stress are associated with decreased hope, and this lower level of hope is one of the pathways through which stress may cause burden.

Although mediating effects in the association between stress and negative outcomes have been extensively studied, very few studies have focused on positive outcomes such as life satisfaction as a cognitive measure of subjective well-being. Furthermore, those studies which have considered such outcomes did not include a variety of primary and secondary stressors. For example, Khusaifan and El Keshky (2017) investigated the association between depression and life satisfaction with social support as a mediator, whereas Morano (2003) explored how appraisal of burden and satisfaction, and the perception of support mediate the effects of caregiving on somatic complaints, depression, personal gain and life satisfaction. To the best of our knowledge, there are no studies analysing the mediating role of character strengths in the relationship between stressors and life satisfaction in informal caregivers of people with dementia. In the general population, research has shown that character strengths as a whole are positively related to psychological adjustment, quality of life, life purpose and

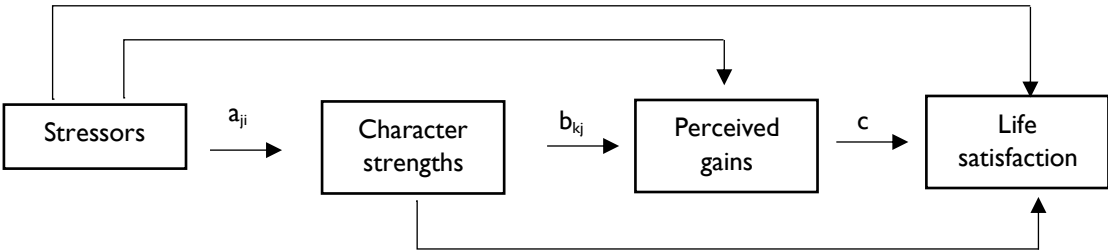
life satisfaction, although hope, love, zest, curiosity and gratitude are the strengths most strongly associated with life satisfaction (Blanca et al., 2018; Lee et al., 2015; Ovejero et al., 2016; Park & Peterson, 2006a, b; Proyer et al., 2011).

From within the framework of positive psychology there is also evidence that caregivers who more strongly endorse certain strengths perceive more positive aspects of caregiving. Specifically, García-Castro et al. (2019) found that hope, zest, gratitude, curiosity, love, teamwork and creativity had moderate or high correlations with perceived gains, although once the overlap between them was eliminated, hope emerged as the best predictor. It should be noted that the positive aspects or perceived gains of caregiving have been proposed as a mediator variable in the stress process model, suggesting that the ability to find meaning and detect positive aspects in caregiving may act as a coping strategy, enabling the caregiver to deal more effectively with care-related stressors (Cheng et al., 2013; McLennon et al, 2011; Fauziana et al., 2018). However, the mediating effect of perceived gains in the relationship between stressors and health outcomes is limited, since studies are scarce and have included a small number of stressors or have focused on the mediating effect in the relationship between outcome variables (McLennon et al., 2011; Fauziana et al., 2018). Further research in this regard is therefore warranted. With that in mind, it is worth noting that enhancing the positive experience of caregiving is one of the aims of the Senses Framework and relation-centred care, a platform for good practices in the care of older people proposed by Nolan et al. (2006). These authors suggested the need to create and sustain an enriched environment of care in which the needs of all participants (i.e. nurses, care recipients and caregivers) are acknowledged and addressed in order to improve the care provided. In this enriched environment, all those involved should experience a sense of security, belonging, continuity, purpose, achievement and significance, such that they are all able to flourish and grow.

Given the lack of studies with life satisfaction as an outcome, and considering values and perceived gains of caregiving as mediating variables within the framework of the stress process model, the aim of the present study was to explore the role of strengths and perceived gains as potential mediators in the relationship between life satisfaction and primary and secondary stressors in informal caregivers of individuals with dementia, controlling for contextual variables. Our hypothesis was that primary and secondary stressors would be associated with life satisfaction indirectly through

character strengths, which in turn would be associated with perceived gains, determining the level of life satisfaction. To address the study objective we first identify the contextual variables (e.g. age, gender, etc.), the primary stressors (independence for activities of daily living and cognitive impairment in the care recipient, and caregiver's perceived stress) and the secondary stressors (perceived financial difficulties, restriction of leisure time and difficulties at work) which are statistically significant in predicting life satisfaction. We expected to find that lower scores on life satisfaction are related to greater dependency and impairment in the care recipient, and to a higher level of perceived stress and more perceived financial difficulties, difficulties at work and restriction of leisure time in the caregiver. We then analyse the relationship between life satisfaction and strengths in order to identify the strengths with the highest correlations. Here we expected to find similar results to those reported previously in the general population, namely higher correlations between life satisfaction and hope, love, zest, gratitude and curiosity. Finally, having identified the particular contextual variables, stressors and mediators that contribute most to life satisfaction, we test a mediation model consistent with the stress process model (Figure 3).

Figure 3. Proposed mediation model, controlling for contextual variables: predictors (primary and secondary stressors), mediators (character strengths and perceived gains) and outcome (life satisfaction).



Materials and Method

1. Participants

Participants were 112 informal caregivers (87 women and 25 men) of individuals diagnosed with dementia who were recruited through various day centres for people with Alzheimer's and other dementias (Malaga, Spain). Their age ranged from 35 to 82 years old, with a mean of 56.20 ($SD = 12.99$). In order to be eligible for inclusion they had to be aged 18 years or older, to have been the main caregiver for at least six months and to sign informed consent. As regards their sociodemographic characteristics, 27.68% were the care recipient's spouse, 71.43% were married, 32.14% were practising

Catholics, 44.64% were employed, 36.61% had university studies, 78.57% lived with the care recipient, 71.43% perceived restriction of their leisure time, 26.79% had difficulties at work and 8.03% reported no financial difficulties. The mean time as the main caregiver was 4.86 years ($SD = 3.80$; range 0.5 to 28 years). Regarding impairment and dependency in care recipients, only 6.25% showed no cognitive impairment and only 8.93% were independent for activities of daily living.

2. Instruments

2.1. Sociodemographic questionnaire

Participants completed a questionnaire which collected caregiver sociodemographic information about their caregiving role. Variables included in this questionnaire were the caregiver's gender, age, marital and employment status, level of education, religion, relationship to the care recipient, whether they lived with the care recipient, time as caregiver, perceived financial difficulties, whether they perceived a restriction of leisure time and whether they had difficulties at work. The day centres provided information about care recipients, specifically their score on the MMSE and on the Barthel Index as measures of cognitive impairment and independence for activities of daily living, respectively.

2.2. Life satisfaction

Life satisfaction was assessed with the Spanish version (Vázquez et al., 2013) of the *Satisfaction with Life Scale* (SWLS; Diener et al., 1985), which assesses the cognitive component of subjective well-being, reflecting a person's appraisal of his or her life. Each of the five scale items is rated on a seven-point Likert-type scale (from 'strongly disagree' to 'strongly agree'), and hence the total score ranges between 5 and 35. Higher scores indicate a higher level of life satisfaction. In the present sample, Cronbach's alpha coefficient was .89.

2.3. Perceived stress

Perceived stress was assessed with the Spanish version (Daza et al. 2002) of the stress scale of the *Depression Anxiety Stress Scales* (DASS-21; Lovibond & Lovibond 1995). Each of the seven scale items is rated on a four-point Likert-type scale (from 'did not apply to me at all' to 'applied to me very much or most of the time'), with respondents being asked to consider their experience during the past week. The total stress score

therefore ranges between 0 and 21, and higher scores indicate a higher level of perceived stress. In the present sample, Cronbach's alpha coefficient was .88.

2.4. Caregiver gains

Caregiver gains were measured with the Spanish version (Fabà & Villar, 2013; Ponsoda, 2015) of the *Gain in Alzheimer care Instrument* (GAIN; Yap et al., 2010). The GAIN comprises ten items, each rated on a five-point Likert-type scale (from 'disagree a lot' to 'agree a lot'), and hence the total score ranges between 0 and 40. Higher scores indicate a higher level of perceived gains from caregiving tasks. Cronbach's alpha coefficient in the present sample was .88.

2.5. Character strengths

Character strengths were assessed using the Virtues in Action Inventory of Strengths (VIA-IS 72; Peterson & Seligman, 2004; Peterson & Park, 2009), in its Spanish version, which was validated and provided by the VIA Institute on Character. Here we used the short version, comprising 72 items and focusing on 24 character strengths (appreciation of beauty and excellence, creativity, bravery, fairness, curiosity, gratitude, forgiveness, hope, honesty, humor, humility, kindness, judgment, love, leadership, love of learning, perspective, perseverance, self-regulation, prudence, spirituality, social intelligence, teamwork and zest). Each character strength is assessed with three items rated on a five-point Likert-type scale (from 'very much unlike me' to 'very much like me'), the score being computed as the average across these items. Higher scores indicate a stronger presence of that specific character strength. Cronbach's alpha coefficient ranged from .41 to .85.

3. Procedure

We contacted various day centres for people with Alzheimer's disease and other dementias in the province of Malaga and informed them about the objective of the research. Those day centres that agreed to participate then invited caregivers who were attending the centre to take part in the study, and those who accepted were given the questionnaires to complete. All participants were informed about the purpose of the research and it was made clear to them that all the information provided would remain anonymous, and also that they could withdraw from the study at any time. After signing informed consent, they completed the questionnaires in a single one-hour session. The study was approved by the Experimentation Ethics Committee of the University of Málaga, and it was carried out in accordance with the Declaration of Helsinki.

4. Data Analysis

All the analyses were performed using SPSS 26. We first conducted a hierarchical regression in order to identify the contextual variables, primary stressors and secondary stressors that may play a role in the prediction of life satisfaction. In the first step we introduced 10 contextual variables: gender: 1-female, 0-male; age; level of education: 1-primary, 2-secondary, 3-higher (for which we created two dummy variables, with primary studies being the reference category); marital status: 1-married, 0-other; employment status: 1-in work, 0-unemployed; religion: 1-practising catholic, 0-other; relationship to care recipient: 1-spouse, 0-other; and living with care recipient: 1-yes, 0-no; time as main caregiver). In the second step we introduced three primary stressors: independence for activities of daily living, cognitive impairment in the care recipient and caregiver's perceived stress. Finally, in the third step, we introduced three secondary stressors: perceived financial difficulties, rated from 1 to 6; restriction of leisure time: 1-yes, 0-no; and difficulties at work: 1-yes, 0-no.

We then analysed the association between life satisfaction and character strengths, calculating Pearson correlation coefficients in order to identify the strengths with the highest correlation. Following Cohen's (1988) criteria we interpreted coefficients around $|.10|$, $|.30|$ and $|.50|$ as indicating, respectively, a small, moderate and strong correlation. The level of significance was adjusted to $p = .002$ using Bonferroni correction. The correlation between life satisfaction and perceived gains of caregiving was also computed.

Finally, having identified the contextual variables, stressors and character strengths that significantly contribute to life satisfaction, we proceeded to test a mediation model consistent with the stress process model. Statistically significant contextual variables were introduced as control variables, primary and secondary stressors as predictors, and character strengths and perceived gains of caregiving as mediators. The hypotheses underpinning the proposed mediation model were tested using multiple regression. Specifically, we used the customization option of the PROCESS macro v3.4 for SPSS to estimate the research model and the significance of the indirect effects involved (Hayes, 2017). In the first set of models we regressed each of the significant strengths (j) on the significant stressors (i) (each yielding an estimate of coefficient a_{ji}). Scores on gain (k) were then regressed on the strengths considered (j), controlling for stressors (yielding an estimate of coefficient b_{kj}). Finally, life satisfaction

was regressed on gains, controlling for both strengths and stressors (yielding an estimate of coefficient c) (see Figure 3).

PROCESS allows researchers to test for the significance of hypothesized indirect effects by means of bootstrapping. Here we estimated the indirect effect of each stressor on life satisfaction by using the product of the coefficients involved: $a_{ji} \cdot b_{kj} \cdot c$. Similarly, all the other indirect effects in the model (e.g. the indirect effect of stressors on gains via character strengths) were obtained by multiplying the regression coefficients involved ($a_{ji} \cdot b_{kj}$). Given that the product of regression coefficients which capture the indirect effect may not follow a normal distribution, bootstrapping has been recommended from among a number of procedures because it achieves a good balance between type I error and statistical power (Hayes, 2009; MacKinnon, 2008). In this study, 10000 samples were bootstrapped to obtain confidence intervals for these indirect effects.

For all hypotheses involved in the research model we performed one-tailed tests as these are appropriate when directional effects are expected (e.g. Cho & Abe, 2013), particularly in mediation research (Preacher et al., 2010). Accordingly, for indirect effects we calculated the 90% bootstrapped confidence interval.

Results

The model obtained after introducing contextual variables in the first stage of the hierarchical regression was not statistically significant. However, the increment in R^2 was significant after introducing primary stressors in the second stage and secondary stressors in the third step. Overall, in the final step, lower scores on life satisfaction were linked to being a female caregiver, being unmarried, greater cognitive impairment in the care recipient, more perceived stress, restriction of leisure time and more perceived financial difficulties (Table 9).

Regarding the correlation analysis between life satisfaction and strengths, the results after Bonferroni adjustment indicated a significant positive relationship with hope, gratitude, zest, love and curiosity, each of which yielded a correlation coefficient higher than .30. Perceived gains of caregiving were also positively related to life satisfaction. Correlation coefficients are shown in Table 10.

Table 9. Results for hierarchical regression with life satisfaction as the dependent variable.

Variables	Step 1 (SE)	Step 2 (SE)	Step 3 (SE)	F	R ²	ΔR ²
Contextual variables				1.16	.10	
Gender (female)	-1.79 (1.16)	-1.73 (1.08)	-2.44* (1.01)			
Age	0.06 (0.06)	0.01 (0.06)	-0.04 (0.06)			
Level of education (secondary)	-1.76 (1.33)	-1.00 (1.25)	-0.30 (1.14)			
Level of education (higher)	-0.06 (1.16)	0.72 (1.11)	-0.58 (1.04)			
Marital status (married)	1.55 (1.08)	1.61 (1.01)	1.91* (0.91)			
Employment status (in work)	0.58 (1.14)	1.61 (1.06)	0.11 (0.96)			
Religion (practising Catholic)	0.17 (1.07)	-0.06 (0.99)	-0.30 (0.93)			
Relationship to care recipient (spouse)	-3.24 (1.83)	-2.09 (1.72)	-2.09 (1.61)			
Living with care recipient (yes)	-1.09 (1.19)	-1.18 (1.10)	-0.69 (1.05)			
Time as caregiver	-0.12 (0.13)	-0.04 (0.12)	0.03 (0.11)			
Primary stressors				2.54**	.25**	.15**
Independence for activities of daily living		-0.22 (0.48)	-0.69 (0.44)			
Cognitive impairment		.30* (0.58)	1.48** (0.55)			
Perceived stress		-0.35** (0.09)	-0.25** (0.09)			
Secondary stressors				4.22**	.42**	.17**
Perceived financial difficulties			-1.14** (0.34)			
Restriction of leisure time (yes)			-2.61** (1.00)			
Difficulties at work (yes)			-1.83 (1.02)			

Note. ** $p < .01$; * $p < .05$; p -values for regression coefficients are one-tailed tests; regression coefficients are unstandardized. Reference categories are shown in parentheses.

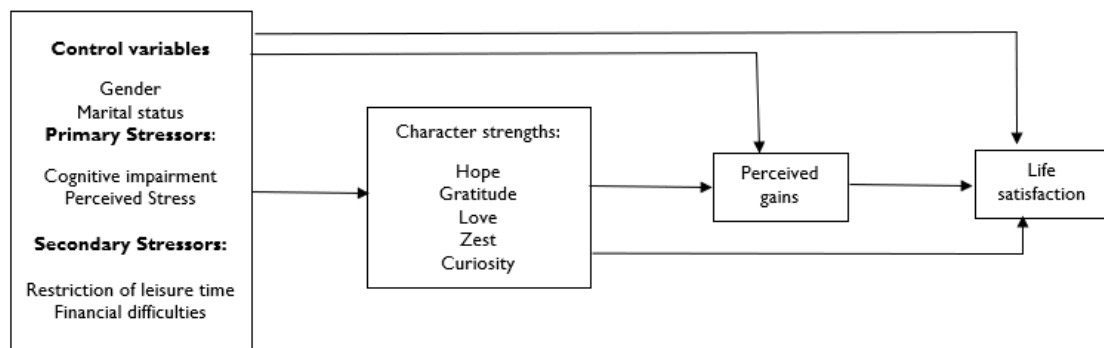
Table 10. Correlation coefficients between life satisfaction and character strengths, and with perceived gains of caregiving.

Strengths	Life satisfaction
Hope	.42**
Gratitude	.33**
Zest	.33**
Love	.33**
Curiosity	.32**
Forgiveness	.23
Creativity	.22
Judgment	.21
Humility	.21
Appreciation of beauty	.19
Teamwork	.18
Self-regulation	.17
Fairness	.17
Social intelligence	.17
Bravery	.16
Leadership	.16
Honesty	.13
Spirituality	.12
Kindness	.11
Perspective	.11
Humor	.10
Perseverance	.09
Love of learning	.08
Prudence	.05
Perceived gains of caregiving	.29**

Note. * $p < .05$; ** $p < .002$ (Bonferroni adjustment).

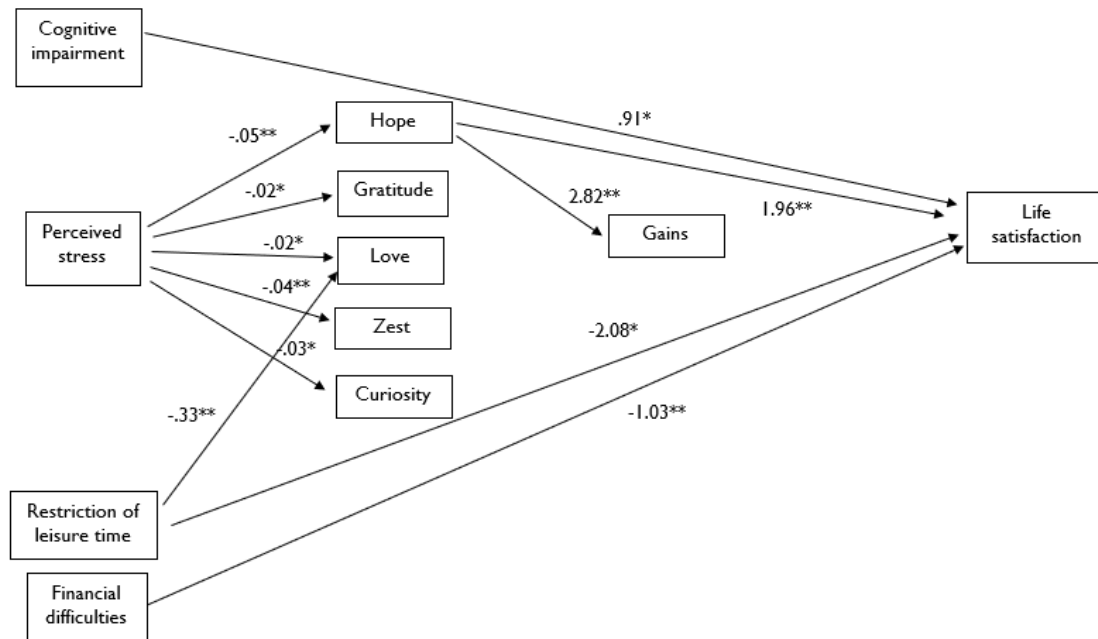
In light of these results, in the mediation model tested to predict life satisfaction we controlled for two contextual variables (gender and marital status) and included two sets of predictors: two primary stressors (cognitive impairment and perceived stress) and two secondary stressors (restriction of leisure time and perceived financial difficulties). Regarding strengths, we included the five variables that showed significant correlations with life satisfaction: hope, gratitude, zest, love and curiosity. These variables were the first mediators in the model, which run in parallel. Finally, we included perceived gains of caregiving as an additional mediator that followed sequentially the five strengths (see Figure 4).

Figure 4. Mediation model tested.



The results showed that only two stressors (perceived stress and restriction of leisure time) were significantly related to the strengths considered. Specifically, after controlling for gender and marital status, perceived stress was negatively related to hope, gratitude, zest, love and curiosity, whereas restriction of leisure time was negatively related only to love (Table 11). In addition, after partialling out the effects of the control variables and stressors, only one of the five strengths considered, namely hope, had a positive and significant relationship with perceived gains of caregiving (Table 12). However, contrary to our expectations, gains were not significantly related to life satisfaction (Table 12). These significant results, which are summarized in Figure 5, indicate that perceived gains of caregiving is not a variable that contributes to explaining the link between stressors and life satisfaction. In fact, none of the indirect effects via gains were significant.

Figure 5. Summary of significant paths in the research model.



It is important to note, however, that one of the predictors included in the model, namely perceived stress, did have an indirect effect on life satisfaction via hope. As mentioned above, perceived stress was negatively related to hope, and hope was positively related to life satisfaction. The corresponding indirect effect was -0.09, with a 90% bootstrapped confidence interval ranging from -0.19 to -0.01. Because this interval does not include zero, the indirect effect of perceived stress on life satisfaction via hope may be considered statistically significant ($p < .05$). The fact that the direct effect of perceived stress on life satisfaction was not significant ($B = -0.14$; $p > .05$) indicates that perceived stress is only negatively related to life satisfaction when hope (and specifically a lack of hope) intervenes. Note too that the indirect effect of perceived stress on gain via hope was also statistically significant. The indirect effect or product of the coefficients involved was -0.14, with a 90% bootstrapped confidence interval ranging from -0.26 to -0.03, which again is statistically significant ($p < .05$).

Regarding the other stressors considered, cognitive impairment, perceived financial difficulties and restriction of leisure time had, as we expected, a statistically significant direct effect on life satisfaction. However, contrary to expectations, none of the proposed mediators contributed to explaining their relationship with life satisfaction.

Table 11. Regression equations: Strengths on stressors.

Variables	Hope	Gratitude	Love	Zest	Curiosity
	B (SE)	B (SE)	B (SE)	B (SE)	B (SE)
Gender (female)	0.11 (0.16)	0.05 (0.13)	0.12 (0.16)	0.05 (0.16)	-0.06 (0.18)
Marital status (married)	0.18 (0.15)	0.23* (0.12)	0.14 (0.14)	0.18 (0.15)	0.09 (0.16)
Cognitive impairment	-0.01 (0.08)	0.07 (0.24)	0.01 (0.08)	0.03 (0.08)	0.03 (0.09)
Perceived stress	-0.05** (0.01)	-0.02* (0.01)	-0.02* (0.01)	-0.04** (0.01)	-0.03* (0.01)
Restriction of leisure time	-0.16 (0.16)	-0.08 (0.12)	-0.33* (0.15)	-0.20 (0.16)	-0.27 (0.17)
Perceived financial difficulties	0.01 (0.05)	-0.06 (0.04)	-0.00 (0.05)	0.01 (0.05)	0.01 (0.06)
	$R^2 = .13^*$	$R^2 = .11^*$	$R^2 = .10$ ($p = .06$)	$R^2 = .12^*$	$R^2 = .09$ ($p = .12$)

Note. ** $p < .01$; * $p < .05$; p -values for regression coefficients are one-tailed tests; regression coefficients are unstandardized. Reference categories are shown in parentheses.

Table 12. Regression equations: Gains on stressors and strengths, and life satisfaction on stressors, strengths and gains.

Variables	Perceived gains of caregiving	Life satisfaction
	B (SE)	B (SE)
Gender (female)	-1.74 (1.41)	-2.23** (0.94)
Marital status (married)	1.53 (1.29)	0.63 (0.86)
Cognitive impairment	0.24 (0.70)	0.91* (0.46)
Perceived stress	-0.35** (0.13)	-0.14 (0.09)
Restriction of leisure time	1.30 (1.39)	-2.08* (0.93)
Perceived financial difficulties	0.33 (0.45)	-1.03** (0.30)
Hope	2.82** (1.19)	1.96** (0.82)
Gratitude	2.19 (1.48)	-0.11 (0.99)
Love	1.02 (1.13)	0.55 (0.75)
Zest	0.21 (1.19)	-0.12 (0.79)
Curiosity	0.08 (1.00)	0.11 (0.66)
Perceived gains		0.02 (0.07)
	$R^2 = .38^{**}$	$R^2 = .41^{**}$

Note. ** $p < .01$; * $p < .05$; p -values for regression coefficients are one-tailed tests; regression coefficients are unstandardized. Reference categories are shown in parentheses.

A post hoc power analysis for each regression equation was run for a sample of $N = 112$ and $\alpha = .05$. For the first regression model (regressing contextual variables and stressors on life satisfaction), there were 16 predictors and an effect (R^2) of .42. The statistical power reached was .99. Regarding the equations involved in the mediation analysis: 1) for the first mediating paths (stressors \rightarrow strengths), controlling for contextual variables, there were six predictors and an average effect of .11; 2) for the second mediating paths (strengths \rightarrow gains), controlling for contextual variables and

stressors, there were 11 predictors and an average effect of .38; and 3) for the third mediating paths (gains → life satisfaction), and after controlling for contextual variables, stressors and strengths, there were 12 predictors and an effect of .41. The statistical power reached for these three equations was .78, .99 and .99, respectively. If we focus on individual regression coefficients included in the equations (between 6 and 16), Green's (1991) rule of thumb for a medium sample size suggests required sample sizes between 110 and 120. Finally, for the indirect effects, results showed that when the regression coefficients involved in the mediation were significant, all the indirect effects were also significant. Power analysis for these indirect effects (see Schoemann et al., 2017) resulted in power levels of .95 (for perceived stress → hope → life satisfaction) and .94 (for perceived stress → hope → gain). Together these results suggest that the sample size for all the equations is acceptable.

Discussion

The present study aimed to explore the role of character strengths and perceived gains of caregiving as potential mediators in the association between informal caregivers' life satisfaction and both primary stressors (independence for activities of daily living and cognitive impairment in the care recipient, and caregiver's perceived stress) and secondary stressors (perceived financial difficulties, restriction of leisure time and difficulties at work), controlling for contextual variables.

We began by conducting a hierarchical regression to identify the contextual variables, as well as the primary and secondary stressors which were statistically significant in the prediction of life satisfaction. Regarding contextual variables, the results obtained in the final stage of the hierarchical regression showed that female and unmarried caregivers scored lower on life satisfaction. Other researchers have reported similar findings and have suggested that women's depressive state, subjective health, and life satisfaction are more affected by informal caregiving because they generally spend more time in this role than do men (Wakabayashi & Kureishi, 2018). There is also empirical evidence that caregiving may have a negative impact on subjective well-being of unmarried caregivers, who may receive less support and thus are more sensitive to stressors from caregiving (Niimi, 2016). Regarding primary and secondary stressors, our results were consistent with what we expected, insofar as a lower level of life satisfaction was related to a higher cognitive impairment in the care recipient, and to more perceived stress, more perceived economic difficulties and restriction of leisure time in caregivers.

These findings highlight that the greater the challenges faced by caregivers the poorer their appraisal of life as a whole. These stressors should therefore be assessed and targeted as part of interventions in care services aimed at supporting caregivers so as to build their coping resources.

In the next stage of our study we conducted a simple correlation analysis with Bonferroni adjustment to identify the strengths most strongly associated with life satisfaction. Our results showed that hope, gratitude, zest, love and curiosity were all positively related to life satisfaction, and that the strongest correlation was with hope. This is in line with what we expected and provides further evidence about the importance of these five strengths, which have been consistently associated with life satisfaction in different studies (without caregiver participants) across the lifespan and across cultures (Blanca et al., 2018; Lee et al., 2015; Ovejero et al., 2016; Park & Peterson, 2006a,b; Proyer et al., 2011). Finally, the correlation analysis also showed a positive relationship between perceived gains of caregiving and life satisfaction. This is in line with previous studies which found that lower life satisfaction in caregivers was associated with fewer perceived benefits and gains from their role (Fabà et al., 2017; Fauziana et al., 2018; Haley et al., 2003).

Having identified the significant contextual variables and stressors, we then tested a mediation model in order to identify the mechanism through which stressors may influence life satisfaction. Gender and marital status were introduced as control variables; perceived stress, cognitive impairment, restriction of leisure time and perceived financial difficulties were considered as stressors; and hope, gratitude, zest, love, curiosity and perceived gains of caregiving were introduced as mediators. Some of the relationships found in the correlational analysis were modified when strengths were introduced into the model, due to the overlap between them. The model verified the direct effect of cognitive impairment, restriction of leisure time and perceived financial difficulties on life satisfaction, but there were no indirect effects for these variables through character strengths or perceived gains. Perceived stress, however, had a significant indirect effect on life satisfaction via hope. None of the other strengths mediated the associations between life satisfaction and stressors. These results suggest that each stressor plays a different role in the prediction of life satisfaction and that there are different pathways through which they affect caregivers' appraisal of their lives.

Future research is warranted in order to test other possible mediators such as coping styles or social support.

The mediating role of hope between perceived stress and life satisfaction indicates, as we expected, that higher levels of perceived stress are related to decreased hope, suggesting that this lack of hope may be one of the pathways through which stress can lead to low life satisfaction. Another interesting result from the mediation model is the significant indirect effect of perceived stress on perceived gains through hope. This finding indicates that a lack of hope is one pathway through which stress may cause not only low life satisfaction but also low perceived gains from caregiving. Perceived gains did not, however, mediate the relationship between stressors and life satisfaction. This suggests that perceived gain is an outcome variable in the stress process model, and that it may be explained by stressors and mediating variables.

The relevance of hope in the caregiving context has been highlighted previously. More specifically, it has recently been reported that hope mediates the association between perceived stress and burden and that hope is the strength most strongly associated with perceived gains (García-Castro et al., 2019, 2020). Hope is conceived as an action-oriented strength and is defined as a positive expectation about the future, such that a person acts in ways that are believed to make desired events more likely (Park et al., 2004; Peterson & Seligman, 2004). Our results here show that a lack of this positive expectation can lead to decreased subjective well-being in caregivers. Overall, this finding provides further support for the positive relationship found across the lifespan in the general population between hope and happiness, life purpose, life satisfaction and well-being (Blanca et al., 2018; Ciarrochi et al., 2015; O'Sullivan, 2011; Ovejero et al., 2016; Proyer et al., 2011). According to hope theory (Snyder, 2000; Snyder et al., 2000), hope has two components: pathway thoughts, referring to the perceived ability to generate possible routes to achieving goals, and agency thoughts, reflecting the motivation to achieve these goals. It is possible that caregivers who experience a lack of hope are less able to generate these two components. Recently, Wang et al. (2020) studied the neurostructural correlates of hope and found that a greater grey matter volume in the left supplementary motor area was robustly linked to higher hope, and, in turn, that hope mediated the relationship between the greater grey matter volume and subjective well-being. These findings shed light on the neuroanatomical basis of hope.

Our mediation model also revealed a number of other relevant results regarding the role of character strengths. First, perceived stress was negatively and significantly related to the five character strengths included in the model (hope, gratitude, zest, love and curiosity), suggesting that caregivers who endorse these character strengths may be able to deal more effectively with care-related stressors. This finding is expected since the endorsement of strengths as a whole is negatively related to perceived stress (Duan et al., 2016; Li et al., 2017). Second, there was a negative and significant association between restriction of leisure time and love. Love has been defined as valuing close relationships with others, particularly those in which sharing and caring are reciprocated (Park et al., 2004), and it is considered one of the character strengths most influenced by environmental factors (Steger et al., 2007). Accordingly, our finding could indicate that caregivers who ascribe greater value to their relationships with others may make more effort to set aside time for these relationships as part of their leisure activities.

Although our study provides some important results, there are several limitations that should be considered. First, participants were recruited through day centres for people with Alzheimer's and other dementias, which may restrict the generalizability of the results. Second, the data were obtained using self-report questionnaires. Finally, the use of a cross-sectional design means that longitudinal studies are needed to provide more information about causal associations. Despite these limitations, the study makes an important contribution in that it tests an overall model which includes the relationship between stressors, character strengths and perceived gains of caregiving as mediating variables and life satisfaction as a health outcome, doing so in accordance with the stress process model. As far as we know, this mediating model has not previously been considered. Overall, the findings show that lower life satisfaction in informal caregivers is associated with being female and unmarried, as well as with both primary and secondary stressors, namely greater cognitive impairment in the care recipient and a higher level of perceived stress, restriction of leisure time and perceived financial difficulties. This highlights that the greater the challenges faced by caregivers the poorer their appraisal of life as a whole. We also found that caregivers with lower levels of hope, gratitude, zest, love and curiosity tend to score lower on life satisfaction. However, when these strengths were introduced into the mediation model, hope was the only one that remained significant, mediating the relationship between perceived stress and life satisfaction, as well as that between perceived stress and perceived gains

of caregiving. Our results therefore identify the mechanism through which stressors may influence life satisfaction and the experience of caregiving, with the lack of hope being one of the pathways through which stress may lead to low life satisfaction and low perceived gains from caregiving.

Overall, the findings of this study have both theoretical and clinical implications. On the one hand, they provide partial support for the stress process model, identifying hope as a key character strength. In addition, they suggest that interventions in care services aimed at building hope might increase both life satisfaction and the perceived benefits of the caring role among caregivers. Helping caregivers to devise goals and to develop routes for reaching them, while boosting their motivation and confidence in relation to achieving them, could enhance their coping resources, thus consolidating their sense of hope and leading to improved psychological well-being. These results are relevant to gerontological nursing based on the Senses Framework and relationship-centred care (Nolan et al., 2006), insofar as they highlight the importance of the senses of purpose (i.e. having personally valuable goals to aspire to) and achievement (i.e. making progress towards these goals) (Nolan et al., 2006; Ryan et al., 2008; Watson, 2019). Nursing and care staff can play an active role in helping informal caregivers to meet their goals by promoting these two senses, thereby fostering a more positive caregiving experience.

2.5. Results

The general aim of this thesis was to explore the role of character strengths in informal caregivers of people with dementia, according to the stress process model. To this end, three studies were performed whose results are summarized below.

A. Association between Character Strengths and Caregiver Burden: Hope as a Mediator

The first study explored the association between character strengths and caregiver burden. Firstly, we identified which character strengths are associated with caregiver burden and determined — after controlling for contextual variables and primary and secondary stressors — which of them are the best predictors of burden. Secondly, we analysed the mediating/moderating effects of the significant character strengths on the relationship between contextual variables, primary and secondary stressors, and caregiver burden.

The results showed a significant negative correlation between caregiver burden and four character strengths: Hope, social intelligence, zest, and love.

Regression modelling was performed to determine the best predictors of caregiver burden. Contextual variables and stressors (primary and secondary) were included as control variables. The control variables that were significant predictors of caregiver burden were living with the care recipient (caregivers who lived with the care recipient reported higher levels of burden), perceived stress (positively associated with caregiver burden), perceived financial difficulties (caregivers who reported income inadequacy showed higher levels of burden), and perceived limitation of leisure time (caregivers who felt they did not have enough leisure time reported higher levels of burden). Character strengths were introduced after controlling for contextual variables and stressors. Hope was the only significant predictor of caregiver burden among the character strengths, and therefore the best predictor of it.

Finally, we investigated the mediating/moderating effect of character strengths on the relationship between significant stressors and caregiver burden. Hope mediated the effect of perceived stress on caregiver burden.

B. The Role of Character Strengths in Predicting Gains in Informal Caregivers of Dementia

The second study explored the association between character strengths and caregiver gains. We identified which character strengths are associated with caregiver gains and determined — after controlling for contextual variables and primary and secondary stressors — which of them are the best predictors of gains.

The results showed that level of education was the only significant predictor of caregiver gains from among the contextual variables and stressors. A negative correlation was found between level of education and gain scores. A significant positive correlation was found between 18 character strengths and gain scores: hope, gratitude, zest, teamwork, love, curiosity, creativity, judgment, leadership, social intelligence, spirituality, forgiveness, appreciation of beauty, kindness, prudence, bravery, humor, and honesty.

A hierarchical regression analysis was conducted. Level of education was introduced in the first block, and the character strengths that were significantly correlated with gain scores were introduced in the second block. In the final stage, the significant predictors were level of education and hope. The results showed that hope was the best predictor of perceived gains among informal caregivers.

C. Life satisfaction and the mediating role of character strengths and gains in informal caregivers

The third study explored the role of character strengths and caregiver gains as potential mediators in the relationship between life satisfaction and primary and secondary stressors in informal caregivers of people with dementia, while controlling for contextual variables. Firstly, we identified the contextual variables and primary and secondary stressors which are statistically significant in predicting life satisfaction. Secondly, we analysed the relationship between life satisfaction and character strengths. Finally, having identified the particular contextual variables, stressors, and mediators that contribute most to life satisfaction, we tested a mediation model that was consistent with the stress process model.

The results showed an association between lower scores on life satisfaction and being a female caregiver, being unmarried, greater cognitive impairment in the care

recipient, more perceived stress, restriction of leisure time, and more perceived financial difficulties.

Regarding character strengths, a significant positive correlation was found between life satisfaction and hope, gratitude, zest, love, and curiosity. In addition, a significant positive association was found between perceived gains of caregiving and life satisfaction.

Finally, regarding the mediation model, gender and marital status were introduced as control variables. Cognitive impairment, perceived stress, restriction of leisure time, and perceived financial difficulties were introduced as predictors. Hope, gratitude, zest, love, curiosity, and perceived gains of caregiving were introduced as mediators. Life satisfaction was the outcome. Results showed a negative association between perceived stress and hope, gratitude, zest, love, and curiosity, whereas a positive association was found between the restriction of leisure time and love. A significant positive association was only found between hope and perceived gains of caregiving. A negative association was found between hope and perceived stress and a positive association was found between hope and life satisfaction. Hope mediated the relationship between perceived stress and life satisfaction.

2.6. Discussion

The general aim of this thesis was to explore the role of character strengths in informal caregivers of people with dementia, according to the stress process model. To this end, three studies were performed. The first study addressed the relationship between character strengths and caregiver burden, as well as the potential mediating role of character strengths. The second study focused on the relationship between character strengths and caregiver gains. Finally, the third study investigated the potential mediating role of character strengths and caregiver gains in the relationship between primary and secondary stressors and life satisfaction, while controlling for contextual variables and following the stress process model.

Results of the first study showed a significant positive association between living with the care recipient, perceived stress, perceived financial difficulties, and perceived limitation of leisure time and caregiver burden, because higher levels of burden were experienced by caregivers who lived with the care recipient, scored higher on perceived stress, reported income inadequacy, and felt they had insufficient leisure time. These results are consistent with the stress process model (Pearlin & Bierman, 2013; Pearlin et al., 1990), and with previous research identifying significant predictors of caregiver burden (Huang et al., 2012; Kim et al., 2012; Park et al., 2015; Sun et al., 2009).

Regarding character strengths, hope, zest, social intelligence, and love yielded significant moderate correlation coefficients, suggesting that caregivers who experience lower burden tend to be more optimistic about the future, approach life with excitement and energy, are aware of their own motives and feelings and those of other people, and value close relationships with others. However, hope was the most important predictor of caregiver burden and mediated the relationship between perceived stress and caregiver burden.

Results of the second study showed a negative association between level of education and caregiver gains. Thus, caregivers lower levels of education tended to perceive greater benefits from the caregiving role. This negative association has also been found in previous research (Kramer, 1997b; Picot, 1995). Kramer (1997b) suggested that highly educated people may perceive a more striking status differential between their role as a professional and their role as caregiver. It is also possible that highly educated caregivers are accustomed to being engaged in more intellectually

stimulating activities, which may make it difficult for them to perceive benefits in daily caring tasks (Kramer, 1997b). These results suggest that intervention programmes should specifically target caregivers with a high educational level to help them identify gains and reduce the stress they experience as a result of their caregiving tasks.

A significant positive association was found between 18 character strengths and caregiver gains, seven of which (hope, gratitude, zest, teamwork, love, curiosity, and creativity) yielded moderate or high correlation values. However, hope was the only significant positive predictor of caregiver gains.

Results of the third study showed that female and unmarried caregivers have lower levels of life satisfaction. Previous research has suggested that women's subjective health, depressive state, and life satisfaction are more affected by informal caregiving because, in general, more time is spent in this role by women than by men (Wakabayashi & Kureishi, 2018), and unmarried caregivers may receive less support (Niimi, 2016). In addition, an association was found between lower levels of life satisfaction and greater cognitive impairment in care recipients, and more perceived stress, more perceived financial difficulties and restriction of leisure time in caregivers. These findings are consistent with previous research (Chappell & Reid, 2002; Hayley et al., 2003).

Regarding character strengths, a positive association was found between hope, gratitude, zest, love and curiosity and life satisfaction. Hope yielded the strongest correlation with life satisfaction. These results are in line with those of previous studies (Blanca et al., 2018; Lee et al., 2015; Ovejero et al., 2016; Park et al., 2004; Park & Peterson, 2006a, b; Proyer et al., 2011), and provide further evidence on the strong association between life satisfaction and the 'strengths of the heart' (Park & Peterson, 2006a). A positive association was also found between caregiver gains and life satisfaction, which supports the results of previous studies which found an association between lower life satisfaction in caregivers and fewer perceived benefits and gains from their role (Fabà et al., 2017; Fauziana et al., 2018; Haley et al., 2003).

Finally, the mediation analysis showed that hope mediated the relationship between perceived stress and life satisfaction. A high level of perceived stress is associated with decreased hope, and this lack of hope may be one of the pathways through which stress can lead to low life satisfaction. Another interesting result from the mediation model is the significant indirect effect of perceived stress on caregiver

gains through hope. This finding suggests that a lack of hope is a pathway through which stress may cause not only low life satisfaction but also low caregiver gains. However, caregiver gains did not mediate the relationship between stressors and life satisfaction, suggesting that caregiver gain is an outcome variable in the stress process model, which may be explained by stressors and mediating variables. In addition, none of the other character strengths mediated the relationships between stressors and life satisfaction. These results suggest that each stressor plays a different role in the prediction of life satisfaction and that there are different pathways through which they affect caregivers' appraisal of their lives.

Results from these three studies show the relevance of hope for caregivers through its association with and mediating role in outcomes such as caregiver burden, caregiver gains, and life satisfaction. These findings are consistent with the stress process model (Pearlin & Bierman, 2013; Pearlin et al., 1990), which suggests that psychological values may buffer the outcomes of mental health and may be a mechanism through which stressors may influence mental health.

The finding on hope provide further support for the positive associations found across the lifespan of individuals between hope and happiness, life purpose, life satisfaction, and well-being (Blanca et al., 2018; Ciarrochi et al., 2015; O'Sullivan, 2011; Ovejero et al., 2016; Park et al., 2004; Proyer et al., 2011), and the negative relationships found between hope and psychological problems, such as anxiety and depression (Niemiec, 2013; Park & Peterson, 2008; Rajandram et al., 2011), burnout (Vetter et al., 2018), and school maladjustment and psychological distress (Gilman et al., 2006; Niemiec, 2013).

Hope has been defined as expecting the best in the future and working to achieve it. Hopeful people are optimistic, believe that things could be better, and usually focus on opportunities and the bright side of the life (Park et al., 2004). Therefore, hope represents a cognitive, emotional, and motivational stance towards the future, such that the individual expects that desired events will occur, acts in ways believed to make them more likely, and feels confident about reaching goals (Peterson & Seligman, 2004). According to hope theory (Snyder, 2000; Snyder et al., 2000), hope also has two goal-directed components: pathway thoughts, referring to the perceived ability to generate

possible routes to achieving goals, and agency thoughts, referring to the motivation to achieve these goals.

Our findings show an association between high levels of perceived stress and decreased hope, and that lower levels of hope are one of the paths through which stress may cause caregiver burden or are related to decreased caregiver gains and lower life satisfaction. Consequently, a more optimistic view of the future and the ability to see oneself as working to achieve one's goals may help caregivers to deal with the perceived negative impact of caregiving tasks. Research has found that high-hope people tend to deal with stressors more effectively, produce more pathways, and are better at generating alternative routes (Snyder, 2000). Furthermore, high-hope people are more likely to have close connections with other people and to show more interest in the goals of others (Snyder et al., 1997).

These studies suggest that hope-based intervention programs aimed at enhancing hope may help caregivers to reduce their burden, identify the positive aspects of caregiving, and improve their life satisfaction. Cognitive-behavioural interventions should be particularly well suited to this purpose, because of the strong emphasis on goal setting, strategy generation, and modification of negative beliefs (Snyder et al., 2000). Thus, cognitive-behavioural interventions based on hope may help caregivers to envision alternative pathways when an existing route is blocked or to increase the number of possible pathways to achieve their specific goals (Snyder et al., 2000).

Several proposals have been made to help caregivers deal with the stress they perceive, including specific activities to develop hope and promote positivity. For example, Herth (2000) developed the Hope Intervention Program for patients with a first recurrence of cancer, which includes activities focused on four attributes of hope (experiential, relational, spiritual, and rational thought processes). These activities include the following: Searching for hope (e.g., becoming aware of and expressing fears, questions, expectations and hopes, and identifying areas of hope and threats to hope); connecting with others (e.g., family members are invited, while participants explore ways to establish a sense of connectedness with others and identify available resources); expanding the boundaries (e.g., thinking about suffering and the meaning of life, and finding sources of strength); and building the hopeful veneer (e.g., learning strategies and techniques about cognitive reframing, or goal readjustment to enhance hope). Rustøen

et al. (2011) also described a hope intervention (the HOPE-IN) for cancer patients. The program, which combines cognitive, affective, and behavioural techniques, consists of eight 2-hour group sessions with activities focused on the following: belief in oneself and in one's own ability (e.g., enhancing beliefs about one's ability to handle feelings about the future); emotional reactions (e.g., becoming aware of feelings related to being a cancer patient); relationship with others (e.g., becoming aware of the network of relationships with family and significant others); active involvement in one's own life (e.g., becoming aware of having active control over situations); spiritual beliefs and values (e.g., reflecting on sources of strengths); and acknowledgement that there is a future (e.g., increasing the feeling that there are solutions and that a favourable outcome is possible).

Although the abovementioned interventions were developed to enhance hope among cancer patients, the positive activities they use may be adapted to the caregiver setting and to the specific needs of individual care.

III. General Conclusions

Overall, this thesis provides further evidence in support of the stress process model by exploring the associations between contextual variables, stressors, caregiver burden, caregiver gains, life satisfaction, and the mediating role of character strengths. The first study showed that the greatest burden is experienced by caregivers who live with the care recipient, score higher on perceived stress, feel that their leisure time is limited, and perceive more economic difficulties. We also found that caregivers who report less burden tend to score higher on hope, zest, social intelligence, and love. However, hope is the best predictor of caregiver burden and mediated the relationship between perceived stress and caregiver burden. These results show that there is an association between high levels of perceived stress and decreased hope, and that lower levels of hope are one of the paths through which stress may cause caregiver burden.

Regarding the second study, the results indicate that caregivers who experience the greatest gains are those with a lower level of education. We also found a positive association between caregiver gains and most of the character strengths, however, once the overlapping strengths were eliminated, hope was again the best predictor of caregiver gains. Thus, caregivers who scored higher on hope tend to perceive more benefits from their caregiving tasks.

Finally, the third study showed that caregivers who experience lower life satisfaction are female, unmarried, perceive more stress, perceive restriction of leisure time and economic difficulties, and care for care recipients with higher cognitive impairment. We also found that caregivers who report lower life satisfaction tend to score lower on hope, gratitude, zest, love, and curiosity. However, hope is the only character strength that remained significant in the mediation model. It mediated the relationship between perceived stress and life satisfaction and between perceived stress and caregiver gains. The mediating role of hope suggests that a high level of perceived stress is related to decreased hope, and that this lack of hope may be one of the pathways through which stress can lead to lower life satisfaction and lower perception of caregiver gains.

In addition to identifying the stressors and contextual variables associated with caregiver burden, perceived gain, and life satisfaction, the main conclusion of the present

thesis is the identification of hope as a key character strength. On the one hand, caregivers who score high on hope tend to perceive less burden, more gains, and a higher level of life satisfaction. On the other hand, the results also confirm the role of hope as a mediator between perceived stress and three outcome variables: caregiver burden, gains, and life satisfaction. Since high levels of perceived stress are related to decreased hope, the mediating role of hope suggests that a lack of hope may be one of the pathways through which stress leads to higher caregiver burden, lower life satisfaction, and perceived lower caregiver gains.

The finding of hope as a key strength suggests that a more optimistic view of the future and the ability to see oneself as working to achieve one's goals may help caregivers to deal with the caregiving tasks. We suggest that cognitive-behavioural interventions based on hope would be appropriate to this purpose, helping individuals to find alternative routes or increase the number of them to achieve their goals (Snyder, 2000; Snyder et al., 2000). We also suggest that these interventions would complement hope-based interventions that include activities based on positive psychology designed to develop hope and positivity. Although these interventions have already been developed for patients with cancer (Herth, 2000; Rustøen et al., 2011), they should also be adapted for informal caregivers of people with dementia and their specific needs.

In conclusion, the results suggest that hope is the main character strength which may protect caregivers from the negative consequences of caregiving, thereby improving their well-being and mental health. Therefore, cognitive-behavioural and hope-based intervention programs could enhance positive emotions, reduce the perceived negative impact of caregiving, help to identify the potential benefits of the caregiving role, and increase the life satisfaction and well-being of caregivers.

IV. Limitations and Future Research

The present thesis has several limitations. Firstly, participants were recruited through associations for families of people with Alzheimer's and other dementias, which may restrict the generalizability of the findings. Secondly, the sample size is moderate, which may also limit the generalizability of the findings. Thirdly, the data were obtained using self-report questionnaires, which may entail participant bias. Fourthly, the use of a cross-sectional design means that no causal relationships can be inferred from the results. Fifthly, the caregivers who scored high on hope may be more likely to self-select as caregivers, which may also bias the sample.

This thesis provided new evidence in support of the stress process model and explored the role of the character strengths in this model. Nevertheless, future studies should further explore and expand these findings. Firstly, this thesis explored the association between different primary and secondary stressors and caregiver burden and well-being, such as perceived stress, living with the care recipient, restriction of leisure time, the degree of cognitive impairment of the care recipient, and perceived financial difficulties. However, future research should also explore the relationship between caregiver burden and well-being and other stressors, such as patient's symptomatology, family conflicts, the care recipient's behavioural problems, hours of caregiving per week, or caregiver health.

Secondly, although this thesis explored the mediating role of character strengths and perceived gains of caregiving in the context of the stress process model, further studies are needed in order to explore other potential mediators and moderators, such as social and family support, personal mastery, or coping style.

Thirdly, even though we explored the role of caregiver gains as a potential mediator of caregiver gains in this thesis, our findings suggest that caregiver gains is an outcome rather than a mediator. Hence, future studies should analyse the role of caregiver gains as an outcome. Thus, caregiver gains would be included in the stress process model as an outcome variable — thereby exploring the effect of stressors mediated by character strengths and other mediating variables — in order to gain wider comprehension of the factors involved in the perception of the benefits of caregiving.

Finally, our findings suggest that a hope-based intervention program for informal caregivers of people with dementia should be developed, implemented, and analysed in order to ascertain its effectiveness. Such an intervention program would be expected to enhance the well-being of caregivers and decrease the negative impact of their role. Several interventions have already been developed in this regard. However, they address patients with cancer. Thus, they should be adapted or used as a reference to develop new intervention programs for informal caregivers of people with dementia and their specific needs. The activities included in these programs should aim to identify goals, implement strategies to achieve them, and increase caregivers' confidence. This would help them to satisfy their basic psychological needs, thus boosting their well-being.

V. References

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VI. Appendix

6.1. Appendix I: Resumen

EL ROL DE LAS FORTALEZAS PSICOLÓGICAS EN LA SALUD MENTAL DE LOS CUIDADORES INFORMALES DE PERSONAS CON DEMENCIA

Fundamentación teórica

Actualmente, la esperanza de vida está aumentando debido al progreso social y sanitario. Esto supone una mayor prevalencia de enfermedades crónicas y de trastornos neurocognitivos (Olazarán-Rodríguez et al., 2012; Prince et al., 2015). La demencia es un trastorno neurocognitivo mayor (American Psychiatric Association, 2013) que interfiere en las funciones diarias de las personas, siendo una de las principales causas de incapacidad en la edad adulta (Alzheimer's Association, 2016; Prince & Jackson, 2009; Prince et al., 2015).

La mayoría de las personas con demencia requieren algún tipo de cuidado a medida que la enfermedad progresa (Prince & Jackson, 2009; Prince et al., 2013). Los cuidadores son los responsables de proveer a la persona con demencia de ese cuidado, ayudándole con las actividades cotidianas básicas. Estos cuidadores se consideran informales cuando no reciben ninguna compensación económica por realizar estas tareas (Folquitto et al., 2013; Settineri et al., 2014).

La demencia no solo tendrá un impacto en los pacientes, sino también en los cuidadores informales, cuyo bienestar, salud física y mental pueden verse alterados como consecuencia de las tareas asociadas al cuidado (Martínez-Cortés et al., 2011).

El impacto de los cuidados en la salud mental y física del cuidador

El rol de cuidador tiene asociada una serie de consecuencias negativas que han sido ampliamente estudiadas, incluyendo sobrecarga, depresión, ansiedad, estrés, aislamiento social, dificultades de sueño, mayor riesgo de enfermedad cardiovascular, y menor bienestar y calidad de vida (Chiao et al., 2015; Conde-Sala et al., 2010; Kim et al., 2012; Raivio et al., 2015; Roepke et al., 2012; Settineri et al., 2014). Entre estas consecuencias, la sobrecarga del cuidador ha sido una de las más estudiadas, siendo definida como el impacto negativo percibido por los cuidadores en su funcionamiento emocional, social, económico, físico y espiritual, como resultado de las restricciones

sociales y del trabajo físico y emocional que conlleva el rol de cuidador (Zarit et al., 1980).

Se han identificado numerosas variables asociadas a la sobrecarga del cuidador. Entre las características del cuidador, algunos estudios han indicado que se hallan mayores niveles de sobrecarga en cuidadores de mayor edad, mujeres, personas divorciadas, con un menor nivel educativo, y que conviven con la persona a la que cuidan (Chiao et al., 2015; Huang et al., 2012; Iavarone et al., 2014; Kim et al., 2012; Park et al., 2015). Respecto a los factores de la enfermedad, se ha encontrado una mayor sobrecarga cuando la persona con demencia se encuentra en un estado más avanzado de la enfermedad, presenta una mayor comorbilidad, un mayor deterioro cognitivo, y problemas comportamentales y síntomas neuropsiquiátricos (e.g., Cheng, 2017; Chiao et al., 2015; Contador et al., 2012; Hashimoto et al., 2017; Park et al., 2015; Raggi et al., 2015; Torrisi et al., 2017). Además, los cuidadores con un peor funcionamiento familiar, menores ingresos, y más dificultades económicas presentan mayores niveles de sobrecarga (Chiao et al., 2015; Huang et al., 2012; Kim et al., 2012; Park et al., 2015; Raggi et al., 2015; Sun et al., 2009), mientras que aquellos con una mayor satisfacción con el tiempo de ocio y una mayor cantidad de apoyos sociales presentan una menor sobrecarga (Del-Pino-Casado & Ordóñez-Urbano, 2016; Dunkin & Anderson-Hanley, 1998). Además, la sobrecarga se ha relacionado positivamente con distimia, depresión, ansiedad y aislamiento social (Contador et al., 2012; García-Alberca et al., 2012; Martínez-Cortés et al., 2011; Shrag et al., 2006; Vérez et al., 2015), y negativamente con la salud autoevaluada, el bienestar y la calidad de vida (Abdollahpour et al., 2014; Anum & Dasti, 2016; Shrag et al., 2006).

Otra medida que se ha estudiado en cuidadores para evaluar el impacto del rol de cuidador en su salud es el del bienestar. La satisfacción vital ha sido una medida frecuentemente empleada en diversos estudios como un indicador del bienestar (e.g., Chappel & Reid, 2002; Khusaifan & El Keshky, 2017; Morano, 2003), siendo considerada como la parte cognitiva del bienestar subjetivo (Diener et al., 1999). Se ha encontrado una menor satisfacción vital en aquellos cuidadores con mayores niveles de sobrecarga (Chappel & Reid, 2002). Una baja satisfacción vital se ha relacionado con cuidadores que son mujeres, que no están casados, que están desempleados, con más horas dedicadas a las tareas del cuidado, con una actividad social más limitada, menores ingresos, menores apoyos y recursos sociales, menor autoestima, menor empatía emocional, mayor nivel

de estrés, menores beneficios percibidos en el cuidado, y más problemas de salud (Borg & Hallberg, 2006; Chappell & Reid, 2002; Fabà et al., 2017; Haley et al., 2003; Lee et al., 2001; Niimi, 2016; Wakabayashi & Kureishi, 2018).

A pesar de las consecuencias negativas, el rol del cuidador también puede estar acompañado de algunos beneficios. Cohen et al. (2002) indicó que la mayoría de las familias y amigos implicados en cuidados informales son capaces de identificar al menos un aspecto positivo procedente de su rol de cuidador. Además, la percepción de una mayor cantidad de aspectos positivos se encuentra asociada con menor sobrecarga, menor depresión y una mejor salud autoevaluada. Diferentes investigaciones han identificado algunos de estos aspectos positivos, como encontrar sentido a través del cuidado, incremento de la satisfacción personal, crecimiento personal y espiritual, y un mayor desarrollo de habilidades y mejoría de las relaciones interpersonales (Cheng et al., 2013; Netto et al., 2009; Rapp & Chao, 2000; Sanders, 2005). Con respecto a estos beneficios procedentes del rol de cuidador, el término *ganancia* fue acuñado por Kramer (1997a) para referirse a la medida en que el rol del cuidador es percibido de una forma en que mejora y enriquece la vida del individuo, incluyendo cualquier resultado positivo, ya sea afectivo o práctico, que se experimenta como resultado directo de convertirse en cuidador. Sanders (2005) propuso tres categorías principales de ganancias: crecimiento espiritual e incremento de la fe, crecimiento personal, y sentimientos de maestría y logro. En esta línea, Netto et al. (2009) también propusieron tres categorías principales: crecimiento personal, ganancias en las relaciones, y ganancias de nivel superior.

Liew et al. (2010) encontraron que las ganancias del cuidador eran mayores en aquellos cuidadores que no trabajaban, que habían sido cuidadores durante más de tres años, que empleaban más del 60% de su tiempo a la semana en tareas de cuidado, que tenían contacto diario con el receptor de los cuidados, que tenían pocas o ninguna dificultad económica, que asistían a programas de grupos de apoyo y educación para el cuidador, y que cuidaban a personas en estados más avanzados de demencia. También sugirieron que un contacto más frecuente y cercano con la persona con demencia ofrecía más oportunidades para sentirse más capacitados, ya que podían desarrollar estrategias más efectivas para el cuidado. La evidencia empírica también ha señalado que las ganancias del cuidador están positivamente asociadas al bienestar, satisfacción vital, sentido de competencia, religiosidad, y al uso de estrategias de cuidado centradas en el

apoyo y en el manejo activo, mientras que están negativamente relacionadas con la sobrecarga del cuidador, depresión y problemas de salud mental (Cheng et al., 2013; Fabà & Villar, 2013; Fabà et al., 2017; Liew et al., 2010; Yap et al., 2010).

El modelo del proceso del estrés

El principal marco teórico que trata de explicar las consecuencias del cuidado recibe el nombre de *modelo del proceso del estrés* (Pearlin et al., 1990; Pearlin & Bierman, 2013), el cual ha sido utilizado y adaptado en diferentes investigaciones (e.g., Conde-Sala et al., 2010; Kim et al., 2012). En este modelo se incluyen diversos factores que interactúan entre sí y determinan cómo una persona reacciona ante el rol de cuidador y su efecto sobre la salud mental y física: factores contextuales (como las características sociodemográficas del cuidador y del receptor de los cuidados) y las variables relacionadas con el cuidado; estresores primarios (estresores relacionados directamente con la salud del receptor de los cuidados y su enfermedad, como los síntomas o el deterioro cognitivo); estresores secundarios (estresores que no están relacionados con el rol de cuidador, pero que pueden tener un impacto en la salud del mismo, como pueden ser los conflictos familiares, o las dificultades económicas y laborales); y factores mediadores y moderadores que pueden determinar como el cuidador afronta o se adapta a la situación.

Entre los factores mediadores y moderadores se han incluido los recursos psicológicos del cuidador, como las estrategias de afrontamiento, el apoyo social o las creencias y valores (Pearlin & Bierman, 2013). Los aspectos positivos o las ganancias percibidas del cuidado también se han propuesto como posibles mediadores en algunas investigaciones (e.g., Cheng et al., 2013; Fauziana et al., 2018; McLennon et al., 2011). Aunque se ha analizado el efecto mediador y moderador de varias variables (e.g., Cheng et al., 2013; Reizer & Hetsroni, 2015; Wang et al., 2018), el rol de las creencias y de los valores ha recibido menor atención. El estudio de estos valores se puede abordar desde la perspectiva de la psicología positiva, un campo de la psicología centrado en la construcción de cualidades positivas (Seligman & Csiksentmihalyi, 2000) y, más específicamente, utilizando la clasificación propuesta por Peterson y Seligman (2004) de las fortalezas psicológicas, llamada *Values in Action* (VIA).

Valores y fortalezas psicológicas

En la clasificación VIA se establecen dos componentes principales: las virtudes y las fortalezas psicológicas. Las virtudes son aquellas características positivas centrales comunes a todas las religiones y aproximaciones filosóficas, que son reconocidas como universales e independientes del contexto histórico. Las fortalezas psicológicas son rasgos positivos que se manifiestan a través del pensamiento, el sentimiento, la voluntad y las acciones, y que podrían clasificarse en grupos según la virtud que predomina en cada uno de ellos. De esta forma, cada virtud estaría formada por un número de fortalezas psicológicas. Peterson y Seligman (2004) concebían las fortalezas como medibles y relativamente estables, aunque lo bastante flexibles como para poder ser desarrolladas. Identificaron 24 fortalezas, que se agrupaban en 6 virtudes. Las virtudes con sus respectivas fortalezas psicológicas son: 1) sabiduría y conocimiento: creatividad, curiosidad, apertura a la experiencia, deseo de aprender y perspectiva; 2) coraje: valor, perseverancia, integridad y vitalidad; 3) humanidad: amor, amabilidad e inteligencia social; 4) justicia: ciudadanía, imparcialidad y liderazgo; 5) moderación: perdón, humildad, prudencia y autorregulación; y 6) trascendencia: apreciación de la belleza, gratitud, esperanza, humor y espiritualidad.

Recientemente, se ha demostrado que las fortalezas psicológicas pueden mejorar la calidad de vida de las personas, e incluso prevenir un desajuste psicológico. Aunque las fortalezas psicológicas en su conjunto están relacionadas con satisfacción vital (Park et al., 2004), la relación positiva con satisfacción vital y felicidad es particularmente fuerte para fortalezas como esperanza, vitalidad, gratitud, amor y curiosidad (Blanca et al., 2018; Lee et al., 2015; Ovejero et al., 2016; Park et al., 2004; Peterson et al., 2007; Proyer et al., 2011).

Las fortalezas también se han asociado a habilidades emocionales, ayudando a regular y reparar las emociones de forma más eficiente (Ros-Morente et al., 2018). Además, esperanza y vitalidad se asocian con menos problemas emocionales como depresión y ansiedad (Niemic, 2013; Park & Peterson, 2008; Zhou et al., 2013). Otras fortalezas, como gratitud, perdón, espiritualidad y apertura a la experiencia, también están relacionadas de forma negativa con depresión (Luna & MacMillan, 2015; Tehranchi et al., 2018). Investigaciones previas han indicado que aquellos individuos con una mayor presencia del conjunto de fortalezas psicológicas tienen una menor probabilidad de

percibir altos niveles de estrés, de manera que esas fortalezas funcionarían como un mecanismo de defensa ante el estrés percibido (Duan, 2016; Li et al., 2017).

Park y Peterson (2009) sugieren que es posible cultivar las fortalezas psicológicas para obtener una vida psicológicamente más sana. Las intervenciones basadas en la psicología positiva pretenden promover los sentimientos, comportamientos y pensamientos positivos (Sin & Lyubomirsky, 2009). Algunas de esas intervenciones se dirigen a identificar fortalezas psicológicas y proponer actividades que ayuden a desarrollarlas o usarlas de manera más frecuente y de formas diferentes (Quinlan et al., 2012). La evidencia empírica muestra que estas intervenciones ayudan a mejorar el bienestar y a reducir síntomas de depresión (Bolier et al., 2013; Sin & Liubomirsky, 2009).

Dado que diferentes investigaciones han indicado que algunas fortalezas psicológicas están asociadas negativamente a problemas psicológicos como la depresión o la ansiedad, y positivamente a la felicidad y a la satisfacción vital, es lógico pensar que también estén relacionadas con la salud mental de personas que ejerzan como cuidadores. Asimismo, ya que las fortalezas psicológicas pueden actuar como un factor protector frente al estrés (Duan, 2016; Li et al., 2017), y que los valores pueden actuar como mediadores o moderadores en el modelo del proceso del estrés (Pearlin & Bierman, 2013), es también posible que algunas fortalezas psicológicas puedan proteger ante los estresores provenientes del cuidado, disminuyendo la sobrecarga e incrementando el bienestar y las ganancias del cuidador.

Según nuestro conocimiento, la relación entre las fortalezas psicológicas con la sobrecarga del cuidador, con la percepción de las ganancias en el cuidado y con la satisfacción vital aún no se ha explorado en estudios previos. Tampoco se han realizado estudios que analicen el potencial efecto mediador o moderador de las fortalezas en la relación entre estresores y variables de salud mental en el marco del modelo del proceso del estrés. El análisis de estas relaciones podría ayudar a identificar aquellas fortalezas que podrían actuar como factores de protección contra la sobrecarga del cuidador, así como identificar los mecanismos a través de los cuales los estresores pueden influir en la salud mental. De esta forma, se podrían diseñar programas de intervención basados en el desarrollo de fortalezas psicológicas con el objetivo de mejorar el bienestar en los cuidadores informales de personas con demencia.

Objetivos de la tesis doctoral

El objetivo general de la presente tesis es el de explorar el rol de las fortalezas psicológicas en cuidadores informales de personas con demencia, de acuerdo con el modelo del proceso del estrés. Para alcanzar este objetivo se han realizado tres estudios empíricos.

En el primer estudio se exploró la asociación entre las fortalezas psicológicas y la sobrecarga del cuidador. En primer lugar, se pretendía identificar aquellas fortalezas psicológicas asociadas a la sobrecarga del cuidador, y determinar (tras controlar las variables contextuales y los estresores primarios y secundarios) cuales de ellas eran las mejores predictoras de la sobrecarga del cuidador. En segundo lugar, el estudio pretendía analizar el efecto mediador y moderador de las fortalezas psicológicas que habían resultado significativas en el análisis anterior en la relación entre estresores y sobrecarga del cuidador. Este estudio se ha publicado en la *Journal of Happiness Studies*, siendo su cita: García-Castro, F. J., Alba, A., & Blanca, M. J. (2020). Association between character strengths and caregiver burden: Hope as a mediator. *Journal of Happiness Studies*, 21(4), 1445-1462. <https://doi.org/10.1007/s10902-019-00138-2>.

El segundo estudio tenía como objetivo analizar la asociación entre fortalezas psicológicas y ganancias percibidas en el cuidado. Se pretendía identificar aquellas fortalezas psicológicas que estuviesen asociadas con las ganancias del cuidador y, posteriormente, determinar (tras controlar las variables contextuales y los estresores primarios y secundarios) cuáles de ellas eran las mejores predictoras de las ganancias percibidas. Este estudio se ha publicado en *Aging & Mental Health*, siendo su cita: García-Castro, F. J., Alba, A., & Blanca, M. J. (2021). The role of character strengths in predicting gains in informal caregivers of dementia. *Aging & Mental Health*, 25 (1), 32-37. <https://doi.org/10.1080/13607863.2019.1667298>.

Por último, el tercer estudio pretendía explorar el rol de las fortalezas psicológicas y de las ganancias percibidas del cuidado como posibles mediadores en la relación entre estresores y satisfacción vital en cuidadores informales de personas con demencia, controlando las variables contextuales. En primer lugar, se identificaron las variables contextuales y los estresores primarios y secundarios que predecían de forma significativa la satisfacción vital. En segundo lugar, se analizaron las relaciones entre satisfacción vital y fortalezas psicológicas. Finalmente, se analizó un modelo de mediación

para predecir la satisfacción vital, consistente con el modelo del proceso del estrés, considerando las variables que resultaron significativas en los análisis anteriores. Este estudio se ha publicado en el *Journal of Psychiatric and Mental Health Nursing*, siendo su cita: García-Castro, F. J., Hernández, A., & Blanca, M. J. (2021). Life satisfaction and the mediating role of character strengths and gains in informal caregivers. *Journal of Psychiatric and Mental Health Nursing*. <http://doi.org/10.1111/jpm.12764>.

Resultados y Discusión

El objetivo general de esta tesis, como se ha mencionado anteriormente, era el de explorar el rol de las fortalezas psicológicas en cuidadores informales de personas con demencia, de acuerdo con el modelo del proceso del estrés. A continuación, se presentan los resultados más relevantes obtenidos en los tres estudios empíricos.

Estudio I. Asociación entre las Fortalezas Psicológicas y la Sobrecarga del Cuidador: Esperanza como mediador.

En este primer estudio se exploró, en primer lugar, la relación entre las fortalezas psicológicas y la sobrecarga del cuidador mediante un análisis de correlación. Posteriormente, se realizó un análisis de regresión con la intención de determinar qué fortalezas psicológicas predicen mejor la sobrecarga del cuidador, controlando las variables contextuales y los estresores. Finalmente, se realizó un análisis de mediación y moderación para analizar el posible rol mediador o moderador de las fortalezas psicológicas en la relación entre las variables contextuales y estresores con la sobrecarga del cuidador.

Las variables contextuales y estresores que resultaron significativos a la hora de predecir la sobrecarga del cuidador fueron la convivencia con el receptor de los cuidados (aquellos cuidadores que vivían con el receptor de los cuidados presentaron mayores niveles de sobrecarga), el estrés percibido (aquellos cuidadores con un mayor nivel de estrés percibido presentaron también mayores niveles de sobrecarga), las dificultades económicas percibidas (los cuidadores que percibían más problemas económicos presentaron una mayor sobrecarga del cuidador), y las limitaciones del tiempo de ocio (los cuidadores que sentían no tener suficiente tiempo de ocio presentaron mayores niveles de sobrecarga). Estos resultados son consistentes con el modelo del proceso del estrés (Pearlin & Bierman, 2013; Pearlin et al., 1990) y con investigaciones previas que identificaron predictores significativos de la sobrecarga del cuidador (Huang et al., 2012;

Kim et al., 2012; Park et al., 2015; Sun et al., 2009). Respecto a las fortalezas psicológicas, los resultados de los análisis de correlación indicaron que la sobrecarga del cuidador se encontraba asociada negativa y significativamente a cuatro fortalezas psicológicas: esperanza, inteligencia social, vitalidad y amor. Tras introducir como variables de control las variables contextuales y los estresores, las fortalezas psicológicas fueron introducidas en la regresión, resultando la fortaleza esperanza la única que predecía la sobrecarga del cuidador de manera significativa. De esta forma, un mayor nivel de la fortaleza esperanza estaba asociado a menor sobrecarga del cuidador.

Por último, se analizó el efecto mediador y moderador de las fortalezas psicológicas. Las variables contextuales y estresores que resultaron significativos como predictores de la sobrecarga del cuidador en el modelo de regresión (convivencia con el receptor de los cuidados, estrés percibido, dificultades económicas percibidas, y limitaciones del tiempo de ocio), se introdujeron en el modelo de mediación y moderación como predictores, mientras la sobrecarga del cuidador se introdujo como variable dependiente, y esperanza como mediador/moderador. Los resultados indicaron que la fortaleza esperanza no moderaba ninguna de estas relaciones. Sin embargo, la fortaleza esperanza medió la relación entre el estrés percibido y la sobrecarga del cuidador, presentando una asociación negativa con ambos.

Estudio II. El rol de las Fortalezas Psicológicas al predecir Ganancias en Cuidadores Informales de Demencia.

En este segundo estudio se exploró la relación entre las fortalezas psicológicas y las ganancias percibidas por el cuidador mediante un análisis de correlación. Posteriormente, se realizó un análisis de regresión jerárquica con la intención de determinar qué fortalezas psicológicas predecían mejor la sobrecarga del cuidador, controlando las variables contextuales y los estresores.

En primer lugar, se llevó a cabo un análisis de regresión múltiple incluyendo las variables contextuales y estresores como predictores, para determinar cuáles se debían controlar en el análisis de regresión jerárquica, y las ganancias del cuidador como variable dependiente. El nivel educativo fue el único predictor significativo. Los cuidadores con un menor nivel educativo tendían a percibir mayores beneficios del rol de cuidador. Esta asociación negativa se ha encontrado también en investigaciones previas (Kramer, 1997b; Picot, 1995). Kramer (1997b) sugirió que las personas con un nivel educativo superior

podrían percibir una diferencia mayor entre su profesión y su rol como cuidador. También es posible que los cuidadores con un mayor nivel educativo se encontrasen más habituados a actividades más estimulantes intelectualmente, lo que podría dificultar la percepción de beneficios procedentes de las actividades del cuidador (Kramer, 1997b).

Respecto a las fortalezas psicológicas, se llevó a cabo un análisis de correlación para determinar cuáles que se relacionaban con las ganancias del cuidador. Dieciocho de las veinticuatro fortalezas se relacionaron con las puntuaciones en ganancias de forma positiva y significativa, aunque fueron siete las que mostraron correlaciones moderadas o altas: esperanza, gratitud, vitalidad, ciudadanía, amor, curiosidad, y creatividad. Por último, se llevó a cabo un análisis de regresión jerárquica, incluyendo el nivel educativo en el primer bloque, y las dieciocho fortalezas psicológicas significativamente asociadas a las ganancias del cuidador en el segundo bloque. Sin embargo, fue la esperanza la única que resultó significativa, siendo, por tanto, la más importante para predecir las ganancias del cuidador.

Estudio III. Satisfacción vital y el rol mediador de las fortalezas psicológicas y ganancias en cuidadores informales.

En este tercer estudio se analizó el rol de las fortalezas psicológicas y las ganancias del cuidador como posibles mediadores en la relación entre satisfacción vital y estresores primarios y secundarios en cuidadores informales de personas con demencia, controlando las variables contextuales. Se llevó a cabo un análisis de regresión jerárquica introduciendo las variables contextuales en el primer paso, los estresores primarios en el segundo, y los estresores secundarios en el tercero. Para analizar la asociación entre satisfacción vital y fortalezas psicológicas se llevó a cabo un análisis de correlación. Finalmente, se realizó un análisis de mediación controlando las variables contextuales que resultaron significativas en el análisis de regresión, introduciendo como predictores los estresores significativos, y con las fortalezas psicológicas que resultaron significativas en el análisis de correlación como mediadoras, además de las ganancias del cuidador.

Con respecto a las variables contextuales, los resultados indicaron que bajas puntuaciones en satisfacción vital se hallaban relacionadas con cuidadores de sexo femenino y que no estaban casados. Entre los estresores, una menor satisfacción vital se asociaba a un mayor deterioro cognitivo del receptor de los cuidados, mayor estrés percibido, mayor restricción del tiempo de ocio y mayor dificultad económica percibida

en los cuidadores. Estos hallazgos son consistentes con estudios previos (Chappell & Reid, 2002; Hayley et al., 2003; Niimi, 2016; Wakabayashi & Kureishi, 2018). Por último, respecto a las fortalezas psicológicas, los resultados mostraron que la satisfacción vital se encontraba asociada positiva y significativamente con esperanza, gratitud, vitalidad, amor y curiosidad. Esperanza fue la fortaleza que mostró una correlación más alta con la satisfacción vital. Estos resultados, están en línea con lo que han apuntado estudios previos con muestras provenientes de distintas poblaciones (Blanca et al., 2018; Lee et al., 2015; Ovejero et al., 2016; Park et al., 2004; Park & Peterson, 2006a, b; Proyer et al., 2011). Además, las ganancias percibidas del cuidado también se encontraban positiva y significativamente asociadas a satisfacción vital, de forma consistente con estudios previos que apuntaban que una menor satisfacción vital está relacionada con menores beneficios percibidos del rol de cuidador (Fabà et al., 2017; Fauziana et al., 2018; Haley et al., 2003).

Finalmente, en el modelo de mediación se controlaron el género y el estado civil, ya que fueron las variables contextuales que resultaron significativas en el primer paso de la regresión jerárquica, mientras que se introdujeron como predictores el deterioro cognitivo, estrés percibido, restricción del tiempo de ocio y dificultades económicas percibidas. Esperanza, gratitud, vitalidad, amor, curiosidad y ganancias percibidas por el cuidador se introdujeron como mediadores, y la satisfacción vital como variable dependiente. Los resultados mostraron que el estrés percibido se encontraba negativamente relacionado con esperanza, gratitud, vitalidad, amor y curiosidad, mientras que la restricción del tiempo de ocio se encontraba positivamente relacionada únicamente con amor. Tan solo esperanza presentó una relación positiva y estadísticamente significativa con las ganancias del cuidado, además de mediar la relación entre estrés percibido y satisfacción vital, y también entre estrés percibido y ganancias del cuidado.

Los resultados de estos tres estudios demuestran que esperanza es la fortaleza psicológica más relevante en el contexto del cuidado informal de personas con demencia, siendo un predictor significativo de la sobrecarga y las ganancias percibidas por el cuidador, así como de su satisfacción vital. Una mayor esperanza se relaciona con un menor nivel de sobrecarga y con una mayor percepción de ganancias y satisfacción vital. Además, esperanza mediaba la relación entre el estrés percibido y tres variables de resultado: sobrecarga del cuidador, ganancias percibidas y satisfacción vital, lo que

sugiere que la falta de esperanza podría ser el mecanismo a través del cual un mayor nivel de estrés percibido conduzca a una mayor sobrecarga del cuidador, a la percepción de menores ganancias derivadas del cuidado y a menores niveles de satisfacción vital. Estos resultados apoyan el modelo del proceso del estrés, en el que mayores niveles de fortalezas y valores psicológicos pueden proteger la salud mental del cuidador (Pearlin & Bierman, 2013; Pearlin et al., 1990).

Además, estos hallazgos sobre el rol de la fortaleza esperanza refuerzan los resultados de investigaciones previas en las que se ha encontrado que a lo largo del ciclo vital hay una relación positiva entre esperanza, felicidad y bienestar (Blanca et al., 2018; Ciarrochi et al., 2015; O'Sullivan, 2011; Ovejero et al., 2016; Park et al., 2004; Proyer et al., 2011). Igualmente, apoyan aquellos estudios que han encontrado una relación negativa entre esperanza y problemas psicológicos como la ansiedad o la depresión (Niemiec, 2013; Park & Peterson, 2008; Rajandram et al., 2011).

La fortaleza esperanza ha sido definida como esperar lo mejor en el futuro y trabajar para lograrlo, e implica que las personas con este rasgo crean que las cosas pueden mejorar, centrándose en las oportunidades y en el lado bueno de la vida (Park et al., 2004). Nuestros hallazgos indican que un mayor nivel de estrés percibido está relacionado con una menor esperanza, y que ese menor nivel de esperanza es uno de los mecanismos a través del cual el estrés podría conducir a la sobrecarga del cuidador, a percibir menores ganancias del cuidado, o a un menor nivel de satisfacción vital. De esta forma, un punto de vista más optimista del futuro, y la habilidad de verse a uno mismo trabajando para conseguir las metas propuestas, podría ayudar a los cuidadores a afrontar el impacto negativo de las tareas del rol de cuidador. Investigaciones previas han mostrado que las personas con elevado nivel de esperanza tienden a afrontar los estresores de una manera más efectiva, siendo capaces de generar más y mejores formas de afrontar los problemas (Snyder, 2000).

Estos estudios sugieren que los programas de intervención basados en la mejora de la fortaleza esperanza podrían ayudar a los cuidadores a reducir la sobrecarga del cuidador, identificar los aspectos positivos del cuidado y mejorar su satisfacción vital. Las intervenciones cognitivo-conductuales deberían de encajar particularmente bien en este propósito debido al fuerte énfasis en la capacidad de fijar objetivos, la generación de diferentes estrategias, y la modificación de creencias negativas (Snyder et al., 2000).

Conclusión

Esta tesis refuerza el modelo del proceso del estrés al explorar las relaciones entre las variables de tipo contextual, estresores, fortalezas psicológicas, sobrecarga del cuidador, percepción de ganancias del cuidado y satisfacción vital. La principal conclusión que se puede extraer es la importancia de la fortaleza esperanza en los cuidadores informales de personas con demencia. Por un lado, los cuidadores que obtienen puntuaciones altas en esperanza tienden a percibir menos sobrecarga, más ganancias del cuidado y mayor satisfacción vital. Por otro lado, los resultados también confirman que esperanza media la relación entre el estrés percibido y la sobrecarga, las ganancias y la satisfacción vital. El rol mediador de esperanza sugiere que una ausencia de esperanza puede ser el mecanismo a través del cual el estrés conduzca a la sobrecarga del cuidador, a menores ganancias y a menores niveles de satisfacción vital.

En conclusión, los resultados indican que esperanza es la principal fortaleza psicológica relacionada con el bienestar y la salud mental de los cuidadores informales, y el desarrollo de esta podría implicar una mejora en el bienestar de los cuidadores, y reducir el impacto negativo del rol que desempeñan. Por este motivo, la terapia cognitivo-conductual, y las intervenciones provenientes de la psicología positiva basadas en la mejora de la esperanza podrían mejorar las emociones positivas, reducir el impacto negativo del rol de cuidador, y ayudar a identificar los potenciales beneficios del desarrollo de las actividades del cuidador, además de incrementar la satisfacción vital y el bienestar.

Limitaciones y futuras líneas de investigación

La presente tesis presenta una serie de limitaciones que deben indicarse. En primer lugar, los participantes provenían de asociaciones de familiares de Alzheimer y otras demencias, lo que puede restringir la generalización de los resultados obtenidos. En segundo lugar, el tamaño muestral es moderado, lo que también puede reducir la generalización de los resultados. En tercer lugar, la recogida de datos se realizó a través de cuestionarios autoadministrados, lo que podría resultar en sesgos subjetivos de los participantes. En cuarto lugar, el uso de un diseño transversal implica la no posibilidad de inferir relaciones causales de los resultados obtenidos. En quinto lugar, los cuidadores que puntuaron más alto en esperanza podrían ser más propensos a ejercer de cuidador informal, lo que también sesgaría la muestra.

A pesar de estas limitaciones, esta tesis provee de nuevas evidencias acerca del modelo del proceso del estrés y explora el rol de las fortalezas psicológicas dentro de este modelo. Se ha analizado la asociación entre diferentes estresores primarios y secundarios con la sobrecarga del cuidador y el bienestar, como el estrés percibido, la convivencia con el receptor de los cuidados, las restricciones del tiempo libre, el deterioro cognitivo del receptor de los cuidados y las dificultades económicas percibidas. Sin embargo, futuras investigaciones deberán explorar la relación con la sobrecarga y el bienestar de otros estresores como la sintomatología y problemas conductuales del receptor de los cuidados, los conflictos familiares, las horas de cuidado por semana, o la salud del cuidador. A pesar de que se ha analizado el rol mediador de las fortalezas psicológicas y las ganancias percibidas del cuidado en el modelo del proceso del estrés, se necesitan más estudios para analizar otros potenciales mediadores y moderadores, tales como el apoyo social y familiar, o el estilo de afrontamiento. Igualmente, futuros estudios deberían profundizar en las variables que pueden mediar la relación entre estresores y las ganancias percibidas del cuidado, ya que nuestros resultados han indicado que esta última variable no tiene un efecto mediador. Finalmente, de acuerdo con los resultados obtenidos, se sugiere desarrollar programas de intervención basados en la mejora de la fortaleza esperanza para los cuidadores informales de personas diagnosticadas de demencia, implementarlos, y analizar su efectividad. Se esperaría que este tipo de programas mejorasen el bienestar de los cuidadores y disminuyeran el impacto negativo del rol de cuidador que ejercen. De esta forma se espera ayudar a los cuidadores a satisfacer sus necesidades psicológicas básicas, además de incrementar su bienestar.

6.2. Appendix 2: Approval of Ethics Committee of University of Málaga



UNIVERSIDAD
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Vicerrectorado de Investigación y Transferencia
Comité Ético de Experimentación de la Universidad de Málaga
(CEUMA)

Nº: 400

Nº de Registro CEUMA: 21-2017-H

INFORME DEL COMITÉ ÉTICO DE EXPERIMENTACIÓN DE LA UNIVERSIDAD DE MÁLAGA

CEUMA

Reunido el Comité Ético de Experimentación en Málaga, el 24 de octubre de 2017 ha evaluado la solicitud del proyecto denominado: "**Variables asociadas a la fortaleza y valores humanos**", cuyo investigador principal es **Dña. María José Blanca Mena**.

Una vez examinada la documentación presentada y verificados aquellos aspectos relacionados con la ética y la legislación en materia de investigación que se indican:

-Se cumplen los requisitos necesarios de idoneidad del protocolo en relación con los objetivos del estudio y están justificados los riesgos y molestias previsibles para el sujeto, teniendo en cuenta los beneficios esperados.

- El procedimiento para obtener el consentimiento informado, incluyendo la hoja de información al sujeto son correctos.

- La idoneidad del procedimiento experimental, especialmente la posibilidad de alcanzar conclusiones válidas de acuerdo con los objetivos establecidos.

- La capacidad del investigador principal y sus colaboradores los medios y las instalaciones previstas son apropiados para llevar a cabo dicho estudio.

- El alcance de las compensaciones y motivaciones previstas no interfiere con el respeto a los postulados éticos.

Acuerda por consenso emitir Informe Ético **FAVORABLE** para dicho proyecto.

Para que así conste D. TEODOMIRO LÓPEZ NAVARRETE, Vicerrector de Investigación y Transferencia y Presidenta del Comité Ético de Investigación de la Universidad de Málaga lo firma en Málaga a 24 de octubre de 2017.

Fdo: Teodomiro López Navarrete.



EFQM

AENOR



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Nº: 400

Nº de Registro CEUMA: 21-2017-H

Una vez instruido el procedimiento, y en base a lo dispuesto en el artículo 84 de la Ley 30/92, de 26 de noviembre, de Régimen Jurídico de las Administraciones Públicas y Procedimiento Administrativo Común, se le da audiencia para que en un plazo de 10 días, contados a partir de la recepción/publicación del presente informe, pueda formular alegaciones y presentar los documentos y justificaciones que estime pertinentes.



EFQM

AENOR



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E-mail: ceuma@uma.es

6.3. Appendix 3: Informed consent for participants

Estimado/a cuidador/a:

Nos dirigimos a usted como grupo de investigación de la Facultad de Psicología de la Universidad de Málaga dirigido por la Dra. María José Blanca, con el propósito de llevar a cabo una investigación orientada a mejorar la calidad de vida de los/las cuidadores/as de personas con una enfermedad que precise cuidados especiales.

Nos gustaría solicitar su ayuda y participación voluntaria en este proyecto que puede ayudar en el futuro a otras personas en su misma situación. La información será tratada de manera confidencial y será utilizada únicamente con fines de investigación. Para ello, le solicitamos que responda a una serie de preguntas relacionadas con su experiencia como cuidador/a.

Para cualquier duda o pregunta acerca de este proyecto puede contactar con la Dra. Blanca a través de la siguiente dirección de correo electrónico: maria.blanca@uma.es

Si acepta colaborar en este estudio, le rogamos que rellene y firme el siguiente consentimiento informado para que podamos utilizar la información que nos proporcione en la investigación.

Yo, _____ participo voluntariamente en este estudio aceptando los siguientes términos:

- La información que facilite será tratada de forma anónima de manera que datos como el nombre o los apellidos no serán publicados ni podrán ser asociados a mis respuestas.
- Autorizo al centro de Asociación de Familiares de Alzheimer para facilitar la información médica sobre la persona que cuido.

Fdo.:

En _____ a _____ de 201__

Muchas gracias por su colaboración

6.4. Appendix 4: Questionnaires

Sociodemographic questionnaire

A continuación, encontrará una serie de preguntas o afirmaciones. Por favor señale con una cruz (X) la opción que más le represente. Tenga presente que no hay respuestas correctas ni incorrectas. Por favor, conteste a todas las preguntas y hágalo con sinceridad.

Sexo: <input type="checkbox"/> Hombre <input type="checkbox"/> Mujer	Fecha de nacimiento (día/mes/año): ____/____/____	Nacionalidad: _____
Estado civil: <input type="checkbox"/> Soltero/a <input type="checkbox"/> Casado/a o conviviendo <input type="checkbox"/> Divorciado/a <input type="checkbox"/> Viudo/a		
Parentesco con la persona enferma: <input type="checkbox"/> Hijo/a <input type="checkbox"/> Hermano/a <input type="checkbox"/> Esposo/a <input type="checkbox"/> Padre/Madre <input type="checkbox"/> Suegro/a <input type="checkbox"/> Tío/a <input type="checkbox"/> Otro (indicar): _____		
Nivel de estudios: <input type="checkbox"/> Sin estudios <input type="checkbox"/> Primarios <input type="checkbox"/> Secundarios <input type="checkbox"/> Formación Profesional <input type="checkbox"/> Universitarios <input type="checkbox"/> Otros (indicar): _____		
Situación laboral: <input type="checkbox"/> Desempleado/a <input type="checkbox"/> En activo <input type="checkbox"/> Jubilado/a <input type="checkbox"/> Otros (indicar): _____		
Religión: <input type="checkbox"/> Católico practicante <input type="checkbox"/> Católico no practicante <input type="checkbox"/> Ateo <input type="checkbox"/> Agnóstico <input type="checkbox"/> Otra (indicar): _____		
Sitúese en una escala de 1 a 6: Nada creyente <input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 4 <input type="checkbox"/> 5 <input type="checkbox"/> 6 Muy creyente		
¿Convive usted con su familiar enfermo/a? <input type="checkbox"/> Sí <input type="checkbox"/> No		
¿Con cuántas personas convive usted en su domicilio? <input type="checkbox"/> 0 <input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 4 <input type="checkbox"/> Más de 4		
¿Desde cuándo es el cuidador/a principal? _____ años _____ meses		
¿Comparte el cuidado de la persona enferma con otros familiares u otras personas? <input type="checkbox"/> Sí <input type="checkbox"/> No		
En caso afirmativo, ¿con cuántos? <input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> Más de 3		
¿Ha necesitado reducir su jornada laboral para atender a su familiar? <input type="checkbox"/> Sí <input type="checkbox"/> No		
¿Ha necesitado dejar su empleo para atender a su familia? <input type="checkbox"/> Sí <input type="checkbox"/> No		
¿Asiste usted a terapia de grupo para familiares? <input type="checkbox"/> Sí <input type="checkbox"/> No		
¿Siente usted que dispone del tiempo libre que necesita? <input type="checkbox"/> Sí <input type="checkbox"/> No		
Con los ingresos que tiene disponibles, señale del 1 al 6 la dificultad que percibe para afrontar el coste de la vida (por ejemplo, mantenimiento de la casa, comida, cuidados médicos, etc.):		
Ninguna dificultad <input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 4 <input type="checkbox"/> 5 <input type="checkbox"/> 6 Mucha dificultad		

Depression, Anxiety, Stress Scales (DASS-21)

DASS-21 Por favor, indique en qué medida ha sentido o notado lo que describe cada una de los siguientes enunciados DURANTE LA SEMANA PASADA .	Nada aplicable a mí	Aplicable a mí en algún grado , o una pequeña parte del tiempo	Aplicable a mí en algún grado considerable , o una buena parte del tiempo	Muy aplicable a mí, o aplicable la mayor parte del tiempo
1. Me costó mucho relajarme.				
2. Me di cuenta que tenía la boca seca.				
3. No podía sentir ningún sentimiento positivo.				
4. Se me hizo difícil respirar.				
5. Se me hizo difícil tomar la iniciativa para hacer cosas.				
6. Reaccioné exageradamente en ciertas situaciones.				
7. Sentí que mis manos temblaban.				
8. Sentí que tenía muchos nervios.				
9. Estaba preocupado por situaciones en las cuales podía tener pánico o en las que podría hacer el ridículo.				
10. Sentí que no tenía nada por que vivir.				
11. Noté que me agitaba.				
12. Se me hizo difícil relajarme.				
13. Me sentí triste y deprimido.				
14. No toleré nada que no me permitiera continuar con lo que estaba haciendo.				
15. Sentí que estaba al punto de pánico.				
16. No me pude entusiasmar por nada.				
17. Sentí que valía muy poco como persona.				
18. Sentí que estaba muy irritable.				
19. Sentí los latidos de mi corazón a pesar de no haber hecho ningún esfuerzo físico.				
20. Tuve miedo sin razón.				
21. Sentí que la vida no tenía ningún sentido.				

Gain in Alzheimer care Instrument (GAIN)

GAIN						
Indique su grado de acuerdo o de desacuerdo con las siguientes afirmaciones.						
CUIDAR A MI FAMILIAR ME HA.....		Muy en desacuerdo	Un poco en desacuerdo	Ni de acuerdo ni en desacuerdo	Un poco de acuerdo	Muy de acuerdo
1.	Ayudado a tener más paciencia y ser más comprensivo/a.					
2.	Hecho más fuerte y resistente.					
3.	Aumentado la conciencia de mí mismo/a, haciéndome más consciente de mí mismo/a.					
4.	Aumentado mis conocimientos y destrezas en el cuidado de enfermos con demencia					
5.	Ayudado a sentirme más cerca de mi familiar con demencia.					
6.	Ayudado a estrechar lazos con mi familia.					
7.	Permitido relacionarme mejor con personas mayores y personas con demencia.					
8.	Dado una visión más profunda sobre el significado de la vida y la perspectiva de mi propia vida.					
9.	Ayudado a crecer espiritualmente (ej. más cercanía a Dios y ser capaz de ver más allá del mundo material).					
10.	Despertado en mí el altruismo (ej. querer ayudar más a otros y contribuir al bienestar de otros que pudieran estar pasando por dificultades similares a las mías).					

Satisfaction With Life Scale (SWLS)

<p style="text-align: center;">SWLS</p> <p>A continuación, hay cinco afirmaciones con las cuales usted puede estar de acuerdo o en desacuerdo. Lea cada una de ellas y después seleccione la respuesta que mejor describa en qué grado está de acuerdo o en desacuerdo.</p>	Fuertemente en desacuerdo	En desacuerdo	Ligeramente en desacuerdo	Ni de acuerdo ni en desacuerdo	Ligeramente de acuerdo	De acuerdo	Fuertemente de acuerdo
1. En la mayoría de los aspectos, mi vida se acerca a mi ideal.							
2. Las condiciones de mi vida son excelentes.							
3. Estoy completamente satisfecho/a con mi vida.							
4. Hasta ahora, he conseguido las cosas más importantes que quiero en la vida.							
5. Si pudiera vivir mi vida de nuevo, no cambiaría nada.							

Zarit Burden Interview (ZBI)

CBI					
Las siguientes afirmaciones reflejan cómo se sienten, a veces, las personas que cuidan a otra persona. Indique, por favor, con qué frecuencia se siente usted así.					
	Nunca	Casi nunca	A veces	Frecuentemente	Casi siempre
1. ¿Siente usted que su familiar solicita más ayuda de la que realmente necesita?					
2. ¿Siente usted que, a causa del tiempo que gasta con su familiar, ya no tiene tiempo suficiente para usted mismo/a?					
3. ¿Se siente estresado/a al tener que cuidar a su familiar y tener además que atender otras responsabilidades? (Ej: con su familia o en el trabajo)					
4. ¿Se siente avergonzado/a por el comportamiento de su familiar?					
5. ¿Se siente irritado/a cuando está cerca de su familiar?					
6. ¿Cree que la situación actual afecta a su relación con amigos u otros miembros de su familia de una forma negativa?					
7. ¿Siente temor por el futuro que le espera a su familiar?					
8. ¿Siente que su familiar depende de usted?					
9. ¿Se siente agotado/a cuando tiene que estar junto a su familiar?					
10. ¿Siente usted que su salud se ha visto afectada por tener que cuidar a su familiar?					
11. ¿Siente que no tiene la vida privada que desearía a causa de su familiar?					
12. ¿Siente que su vida social se ha visto afectada negativamente por tener que cuidar a su familiar?					
13. (Solo si vive con el familiar) ¿Se siente incómodo/a para invitar amigos a casa, a causa de su familiar?					
14. ¿Cree que su familiar espera que usted le cuide, como si fuera la única persona con la que pudiera contar?					
15. ¿Cree usted que no dispone de dinero suficiente para cuidar de su familiar, además de sus otros gastos?					
16. ¿Siente que no va a ser capaz de cuidar a su familiar durante mucho más tiempo?					
17. ¿Siente que ha perdido el control sobre su vida desde que la enfermedad de su familiar se manifestó?					
18. ¿Desearía poder encargar el cuidado de su familiar a otra persona?					
19. ¿Se siente inseguro/a acerca de lo que debe hacer con su familiar?					
20. ¿Siente que debería hacer más de lo que hace por su familiar?					
21. ¿Cree que podría cuidar a su familiar mejor de lo que lo hace?					
22. En general, ¿se siente muy sobrecargado/a al tener que cuidar de su familiar?					

Virtues in Action Inventory of Strengths (VIA-IS)

This questionnaire is confidential and cannot be published or distributed in dissertation.

For more information, visit <http://www.viacharacter.org/>.

6.5. Appendix 5: Evidence for the publication of papers

Association Between Character Strengths and Caregiver Burden: Hope as a Mediator

F. Javier García-Castro, Ana Alba & María J. Blanca

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Association Between Character Strengths and Caregiver Burden: Hope as a Mediator

F. Javier García-Castro¹ · Ana Alba¹ · María J. Blanca¹ 

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Abstract

Caregiver burden is the negative impact that caregivers perceive as a result of their caregiving tasks. According to the stress process model, contextual variables and primary and secondary stressors produce negative mental health outcomes in caregivers. However, this relationship may be buffered by psychological resources which act as mediators/moderators. Although there is research on the mediating/moderating effect of mastery, coping strategies, and social support, the effect of psychological values remains unexplored. This study aimed to explore, after controlling for contextual variables and stressors, which character strengths are associated with caregiver burden. We also sought to analyze the mediating/moderating effect of character strengths on the relationship between burden and the significant contextual variables and stressors. To this end, a sample of 115 caregivers of people diagnosed with dementia completed a questionnaire battery. Correlational analysis, multiple regression modeling, and mediation and moderation analysis were performed. The results revealed that the caregivers who experience the greatest burden are those who live with the care recipient, who score higher on perceived stress, who feel their leisure time is limited, and who perceive more financial strain. Higher scores on caregiver burden were associated with lower scores on hope, zest, social intelligence, and love. Regression modeling indicated that hope was the strength which best predicted burden and that hope mediated the relationship between perceived stress and burden. No moderation effect was found. The results suggest that hope-based programs could enhance positive emotions and reduce the perceived negative impact of caregiving.

Keywords Alzheimer · Dementia · Financial strain · VIA-IS · ZBI · Virtues · Leisure time · Perceived stress

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1 Introduction

Caregiver burden has been defined as the negative impact perceived by caregivers on their emotional, social, financial, physical, and spiritual functioning as a result of social restrictions and the physical and emotional work that their care role entails (Zarit et al. 1980). It can thus be considered a multidimensional response to the negative appraisal and perceived stress resulting from taking care of an ill individual (Kim et al. 2012). Research has found that burden is positively associated with caregiver dysthymia and depression, anxiety, and social isolation (García-Alberca et al. 2012; Vérez et al. 2015; Martínez et al. 2011), and negatively associated with self-rated health, well-being, and quality of life (Abdollahpour et al. 2014; Anum and Dasti 2016; Shrag et al. 2006).

Identifying factors which predict caregiver burden could be useful for the development of intervention programs aimed at improving the quality of life of both caregivers and care recipients (Contador et al. 2012). The main theoretical model that identifies predictors of burden is the stress process model (Pearlin and Bierman 2013; Pearlin et al. 1990) which has been adapted (Conde-Sala et al. 2010) and widely used in research (e.g., Kim et al. 2012; Mausbach et al. 2012; McLennon et al. 2011). According to this model, primary stressors have an impact on secondary stressors, which in turn have an effect on mental health outcomes. Primary stressors can be both objective (e.g., the care recipient's symptoms and the disease progression) and subjective (e.g., perceived overload in the caregiver). Secondary stressors are the strains experienced in roles and activities outside of caregiving, such as family conflict, financial difficulties, difficulty participating in social activities or difficulties at work. Both primary and secondary stressors are influenced by contextual/background variables, such as the sociodemographic profile of both caregiver and care recipient (age, socioeconomic status, educational level, etc.) and aspects related to the caregiving role (e.g., duration of caregiving, number of people sharing care tasks, etc.). The relationship between contextual variables, primary and secondary stressors, and mental health outcomes may be buffered by psychosocial resources that act as mediators/moderators. In this respect, the stress process model is similar to the theory of stress proposed by Lazarus and Folkman (1984), in which stress is related to stressors and to an individual's resources for coping with them.

Research has identified numerous stressors associated with caregiver burden. Although the empirical evidence is somewhat inconsistent across samples with regard to contextual variables, some studies have shown that higher levels of burden are reported by older, female, divorced caregivers, by caregivers with a lower educational level, and by those who live with the care recipient (Chiao et al. 2015; Huang et al. 2012; Iavarone et al. 2014; Kim et al. 2012; Park et al. 2015). Among primary stressors, studies have shown that greater caregiver burden is associated with more advanced stages of disease, comorbidity, lower Mini Mental State Examination (MMSE) scores (i.e., higher cognitive impairment), and the presence and severity of behavioral manifestations or neuropsychiatric symptoms (e.g., Cheng 2017; Chiao et al. 2015; Contador et al. 2012; Hashimoto et al. 2017; Park et al. 2015; Raggi et al. 2015; Torrisi et al. 2017). Regarding secondary stressors, research has found that caregivers with poor family functioning, a low income, and perceived financial difficulties report higher levels of burden (Chiao et al. 2015; Huang et al. 2012; Kim et al. 2012; Park et al. 2015; Raggi et al. 2015; Sun et al. 2009). Conversely, satisfaction with leisure time and larger social networks are variables associated with less caregiver burden (Del-Pino-Casado and Ordóñez-Urbano 2016; Dunkin and Anderson-Hanley 1998).

The empirical evidence also suggests considerable variation in the extent to which caregivers cope with their role. Thus, while some caregivers seem to manage stressors successfully, others do not and suffer negative outcomes such as burden, depression, anxiety, and poor mental and physical health (Conde-Sala et al. 2010). These differences may be explained by mediating or moderating factors. Pearlin and Bierman (2013) included among these factors a person's psychological resources such as personal mastery, coping strategies, social support, and beliefs and values. Research in this field has shown that the relationship between stress and depression in Alzheimer's caregivers is significantly mediated by personal mastery or perceived control, efficacy beliefs, activity restriction, and avoidance coping (Mausbach et al. 2006, 2012). A more recent report found that social support significantly moderated the effects of the Alzheimer's patient's cognitive function and depression on caregiver burden, and also that the positive aspects of caregiving mediated the relationship (Wang et al. 2018). However, the role of beliefs and values has received little attention in previous studies.

The study of values can be addressed from the perspective of positive psychology, and more specifically using the Values in Action (VIA) classification proposed by Peterson and Seligman (2004). This classification establishes two components of good character: virtues and character strengths. Virtues are the core characteristics common to all religious and philosophical approaches, and they are regarded as universal and independent of a specific historical moment. Each virtue is comprised of a number of character strengths, ubiquitously recognized positive traits that are manifested through thinking (cognition), feeling (affect), will (conation or volition), and action (behavior). Peterson and Seligman (2004) conceived of character strengths as being measurable and relatively stable, but also flexible enough to be fostered and to allow further development. The VIA classification includes six classes of virtues and 24 character strengths, which are listed in Table 1. Peterson and Seligman (2004) also developed the Values in Action Inventory of Strengths (VIA-IS) in order to measure the degree to which individuals endorse items reflecting the 24 strengths.

In recent decades, research has shown that the endorsement of strengths is related to higher perceived quality of life and psychological adjustment. Although character strengths as a whole are linked to life satisfaction (Park et al. 2004), the positive relationship with life satisfaction and happiness is particularly strong for strengths such as hope, zest, gratitude, love, and curiosity (Lee et al. 2015; Ovejero et al. 2016; Park et al. 2004; Proyer et al. 2011). Studies have also shown that most character strengths are positively related to positive affect (Littman-Ovada and Lavy 2012; Azañedo et al. 2014, 2017), with hope, zest, humor, gratitude, and love yielding the strongest positive correlations (Martínez-Martí and Ruch 2014).

Strengths are also associated with emotional abilities, insofar as individuals who score high on character strengths tend to regulate and repair their emotions more efficiently (Ros-Morente et al. 2018). Furthermore, hope and zest have been associated with fewer emotional problems such as depression and anxiety (Niemic 2013; Park and Peterson 2008; Zhou et al. 2013). Other strengths negatively correlated with depression are gratitude, forgiveness, spirituality, and judgment (Luna and MacMillan 2015; Tehranchi et al. 2018).

Research also suggests that individuals who endorse character strengths are more likely to perceive less stress (Li et al. 2017). It has been argued that strengths may function as a defense against perceived stress (Duan 2016), that they allow for psychological and physiological adaptation to stress (Li et al. 2017), and that they are valuable resources to improve coping with work-related stress and reduce the negative effects of stress (Harzer and Ruch 2015).

Table 1 Virtues and character strengths, examples of items, and internal consistency coefficients

Strength	Example of item	Internal consistency
Wisdom and knowledge		
Creativity	I am always coming up with new ways to do things	.73
Curiosity	I am always busy with something interesting	.66
Love of learning	I read all of the time	.86
Judgment	I always weigh the pros and cons	.48
Perspective	Others consider me to be a wise person	.68
Courage		
Honesty	I always keep my promises	.73
Bravery	I always stand up for my beliefs	.61
Perseverance	I always finish what I start	.76
Zest	I have lots of energy	.71
Humanity		
Kindness	I really enjoy doing small favors for friends	.50
Love	I can express love to someone else	.70
Social intelligence	I always know what to say to make people feel good	.50
Justice		
Fairness	Everyone's rights are equally important to me	.56
Leadership	As a leader, I treat everyone equally well regardless of his or her experience	.67
Teamwork	Without exception, I support my teammates or fellow group members	.62
Temperance		
Forgiveness	I believe it is best to forgive and forget	.51
Humility	I never brag about my accomplishments	.50
Prudence	I always make careful choices	.65
Self-regulation	I am a highly disciplined person	.45
Transcendence		
Appreciation of beauty and excellence	I am always aware of the natural beauty in the environment	.69
Gratitude	I feel thankful for what I have received in life	.61
Hope	I know that I will succeed with the goals I set for myself	.65
Humor	I try to add some humor to whatever I do	.84
Spirituality	I practice my religion	.72

Park and Peterson (2009) suggest that it is advisable to cultivate these positive traits for a psychologically healthy life. Positive psychology interventions aim to foster positive feelings, behaviors or cognitions (Sin and Lyubomirsky 2009), and they may improve the effectiveness of traditional psychotherapy (Rashid 2015). Some interventions in this context aim to identify character strengths and to propose activities that can help people to develop them or use them more often or in different ways (Quinlan et al. 2012). Examples of such activities include expressing gratitude, thinking about positive life events, practicing optimistic thinking, practicing kindness, and visualizing an ideal future (e.g., Boehm et al. 2011; Lyubomirsky et al. 2011; Mongrain and Anselmo-Matthews 2012; Rashid 2015; Seligman et al. 2005).

The empirical evidence suggests that positive interventions which seek to promote character strengths can enhance well-being, happiness and reduce symptoms of depression (Bolier et al. 2013; Schutte and Malouff 2018; Sin and Lyubomirsky 2009). Positive interventions have also been consistently shown effective in improving well-being and reducing distress in people with clinical disorders (Chakhssi et al. 2018) and enhanced quality of life, hope, optimism, life satisfaction, and happiness in breast cancer (Casellas-Grau et al. 2014).

Lyubomirsky and Layous (2013) proposed the positive-activity model in order to explain how and why positive activities work and are able to boost well-being. They suggest that such activities stimulate an increase in positive emotions, positive thoughts, and positive behavior, as well as the satisfaction of basic psychological needs (e.g., autonomy, connectedness, and competence). According to their model, the extent to which well-being is enhanced will be influenced both by features of the activity (e.g., social support or dosage) and features of the person (e.g., motivation or efficacy beliefs).

Given that some character strengths have been associated with decreased stress and fewer psychological problems such as depression and anxiety, it is plausible that strengths may also be related to other responses to stress such as caregiver burden. As we noted earlier, caregiver burden is positively related to anxiety and depression and negatively associated with well-being. Furthermore, it has been suggested that character strengths may function as protective factors against stress and mental health problems (Duan 2016; Li et al. 2017). It is therefore possible that some character strengths may also protect against caregiver burden, such that caregivers who endorse these strengths would experience less burden.

To the best of our knowledge, the relationship between caregiver burden and character strengths has yet to be explored. However, an analysis of this relationship would help to identify which character strengths are related to burden and may mediate or moderate the relationship between stressors and burden. This would provide a platform for the design of intervention programs aimed at developing personal strengths, enhancing positive emotions, and improving well-being among caregivers. The goal of the present study was therefore to identify which character strengths are associated with caregiver burden and to determine—after controlling for contextual variables and primary and secondary stressors—which of them are the best predictors of burden. We expected to find a negative correlation between caregiver burden and character strengths, especially hope and zest, which seem to be the most important character strengths in relation to emotional problems such as depression and anxiety (Niemiec 2013; Park and Peterson 2008; Zhou et al. 2013).

From the point of view of research, identifying the strengths which best predict caregiver burden would enable a more detailed examination of their role within the stress process model, analyzing their mediating or moderating effects on the relationship between stressors and health outcomes. Consequently, a further aim of this study was, having identified the significant character strengths, to examine their mediating/moderating effect on the relationship between contextual variables, primary and secondary stressors, and caregiver burden.

2 Method

2.1 Participants

The sample comprised 115 main caregivers (25 males and 90 females) of people diagnosed with dementia. They were aged between 35 and 82 years ($M=56.15$, $SD=12.93$) and were recruited through 11 different associations for families of people with Alzheimer's

and other dementias in the province of Malaga, Spain. The inclusion criteria were: (1) age 18 years or older; (2) being the main caregiver for at least 6 months; (3) care recipient has a diagnosis of dementia; (4) care recipient attends a day center run by one of the abovementioned associations; and (5) signing of informed consent. Most participants were of Spanish origin (97.4%), married (72.1%), and the son or daughter of the care recipient (66.1%). The time of being the main caregiver ranged from .5 to 28 years ($M=4.79$; $SD=3.773$). Table 2 details the sample characteristics and the information collected about caregiving.

2.2 Measures

2.2.1 Sociodemographic Questionnaire

Participants were asked to complete a questionnaire that gathered sociodemographic data and information related to contextual variables and primary and secondary stressors so that, in the statistical analysis, we could control for the possible influence of these variables. Specifically, the questionnaire recorded the caregiver's gender, age, marital status, relationship to the care recipient, level of education, employment status, religion, whether or not they lived with the care recipient, the number of people with whom the caregiver lived and shared care tasks, whether they attended a support group, perceived financial difficulties, and whether they felt they had enough leisure time. The response options for these variables are shown in Table 2. The care recipient's score on the MMSE, as a measure of the degree of cognitive impairment, and on the Barthel Index, as a measure of the degree of independence for activities of daily living, were also considered as control variables.

2.2.2 Perceived Stress

This variable was measured with the stress subscale of the Depression Anxiety Stress Scales (DASS-21; Lovibond and Lovibond 1995a, b), in its Spanish version (Daza et al. 2002). The stress subscale contains seven items that the respondent must rate using a four-point Likert-type scale (0 = did not apply to me at all; 3 = applied to me very much, or most of the time). An example item is: *I found it difficult to relax*. Cronbach's alpha coefficient in the present sample was .88. Higher scores indicate a higher level of perceived stress related to difficulty relaxing and being tense, easily agitated, nervous and irritable.

2.2.3 Caregiver Burden

The burden perceived by caregivers was assessed with the Zarit Burden Interview (ZBI; Zarit et al. 1980), in its Spanish version (Martín et al. 1996). The ZBI comprises 22 self-report items that are rated on a five-point Likert scale (1 = never; 5 = almost always). An example item from this instrument is: *Do you feel that because of the time you spend with your relative that you don't have enough time for yourself?* Cronbach's alpha coefficient in the present sample was .93. A higher total score indicates greater caregiver burden.

2.2.4 VIA Inventory of Strengths (VIA-IS; Peterson and Seligman 2004; Peterson and Park 2009)

We used the 72-item Spanish version of this questionnaire (VIA-72), provided by the VIA Institute on Character. For each character strength there are three self-rated items that use

Table 2 Sociodemographic data for the sample and information collected about caregiving

Variables	Percentage
Gender	
Male	21.7
Female	78.3
Marital status	
Married	72.1
Single	15.7
Divorced or separated	6.1
Widowed	6.1
Relationship to the care recipient	
Son or daughter	66.1
Spouse	27.8
Other	6.1
Level of education	
No schooling	8.7
Primary	32.2
Secondary	23.4
University	35.7
Employment status	
Unemployed	29.6
Employed	43.4
Retired/not working due to disability	27
Religion	
Practicing catholic	32.2
Non-practicing catholic	43.5
Atheist/agnostic	18.2
Other	6.1
Living with the care recipient	
Yes	79.1
No	20.9
Number of people with whom caregiver lives	
0	2.6
1	40
2	19.1
3	16.5
4	12.2
More than 4	9.6
Number of people with whom caregiver shares care tasks	
0	37.4
1	27.0
2	20.0
3	8.7
More than 3	7.0
Attends support group	
Yes	27.8
No	72.2

Table 2 (continued)

Variables	Percentage
Perceived financial difficulties (1–6)	
1–2 (No difficulties)	23.5
3	33.9
4	20.9
5–6 (Very difficult)	21.7
Perceived limitation of leisure time	
No	28.7
Yes	71.3
Care recipient cognitive impairment (MMSE)	
No impairment	6.1
Mild	18.2
Moderate	43.5
Severe	32.2
Independence for activities of daily living (Barthel Index)	
Independent	9.6
Minimally dependent	10.4
Partially dependent	39.1
Very dependent	30.5
Totally dependent	10.4

a five-point Likert response format (1 = very much unlike me; 5 = very much like me). The score for each strength is the average across the three items (range 1–5). A higher score indicates a stronger endorsement of the strength in question. The 24 strengths are listed in Table 1, along with example items and the respective internal consistency coefficients.

2.3 Procedure

The study procedures were carried out in accordance with the Declaration of Helsinki, and the Experimentation Ethics Committee of the University of Malaga approved the study. The research team contacted different associations for families of people with Alzheimer's and other dementias in the province of Malaga and informed them about the study objectives and procedures. In those associations which agreed to participate, family members who were attending the association's day center were invited to take part in the study, and those who agreed completed the questionnaires (sociodemographic questionnaire, stress subscale of the DASS, ZBI, and VIA-IS) in a single session lasting around one hour. All participants signed informed consent forms, which included a statement of study purpose, instructions, and confidentiality procedures.

2.4 Data Analysis

In order to analyze the relationship between caregiver burden and character strengths we calculated Pearson correlation coefficients between scores on the ZBI and scores for the 24 strengths assessed by the VIA-IS. Bonferroni correction was used to adjust the level of

significance to $p = .002$. Following Cohen's criterion (1988) we considered a coefficient of $|.10|$ as a small correlation, $|.30|$ as moderate, and $|.50|$ or higher as a strong correlation.

In order to identify the predictors of caregiver burden we conducted multiple regression analysis. In the first stage, the following contextual variables and primary and secondary stressors were included as control variables in the regression model: MMSE score, Barthel Index, gender, age, marital status, relationship with the care recipient, level of education, employment status, religion, living with the care recipient, number of people with whom the caregiver lives and shares care tasks, whether the caregiver attends a support group, perceived financial difficulties, perceived limitation of leisure time, and perceived stress.

In the second stage, a regression modelling approach was used to include character strengths as predictors in the model. Since strengths are inter-correlated this approach allows us to identify what each strength adds to the explanation of caregiver burden. The predictors were added in descending order of their corresponding correlation coefficient, including in the modelling process those strengths whose correlation coefficient with caregiver burden was $|.20|$ or higher. The change in R^2 significance was tested when a predictor was added to the model, and a predictor was retained when the increment was significant.

Finally, in order to analyze the mediating and moderating effect of significant character strengths we used the approach to mediation and moderation described by Hayes (2018). This involved performing 10,000 bootstrap iterations to generate 95% confidence intervals for the indirect effect, using the PROCESS Macro 3.0 for SPSS. For this analysis we considered the significant contextual variables and stressors as predictors, the significant strengths as mediators/moderators, and caregiver burden as the dependent variable.

3 Results

Table 3 shows correlations between caregiver burden and character strengths. The results indicated that, after Bonferroni adjustment, caregiver burden was negatively and significantly correlated with four character strengths.

Regression modelling was performed to determine the predictors of caregiver burden. The first model included contextual variables and primary and secondary stressors as control variables. This model yielded an R^2 equal to $.63$, $p < .001$. We then tested models in which each of the character strengths yielding a correlation of at least $|.20|$ with the ZBI were entered in stepwise fashion as predictors. The predictors were added in descending order of their corresponding correlation coefficient, in accordance with Table 3. The second model therefore included control variables and hope. The increment in R^2 (ΔR^2) was equal to $.02$ and was statistically significant ($p = .03$), and hence hope was retained in the model. In the third model, control variables, hope, and social intelligence were entered as predictors. The ΔR^2 was equal to $.001$ and was not significant, and consequently social intelligence was removed from the model. We proceeded step by step, adding zest, love, forgiveness, curiosity, spirituality, gratitude, self-regulation, teamwork, creativity, and bravery to the second model. The ΔR^2 resulting from the addition of each of these strengths was smaller than $.01$ and was not significant, and thus none of them was retained. The selected model therefore included control variables and hope as a predictor of caregiver burden, with R^2 equal to $.65$, $F(22, 90) = 6.91$, $p < .001$. The residual of this model fulfilled the assumptions of linearity, normality, and homogeneity of variances. Table 4 shows the regression coefficients of the model.

Table 3 Correlations between character strengths (VIA scores) and caregiver burden (ZBI scores)

Strengths	Caregiver burden
Hope	-.36*
Social Intelligence	-.31*
Zest	-.30*
Love	-.28*
Forgiveness	-.27
Curiosity	-.27
Spirituality	-.26
Gratitude	-.25
Self-Regulation	-.24
Teamwork	-.22
Creativity	-.20
Bravery	-.20
Perseverance	-.19
Appreciation of Beauty	-.18
Humor	-.17
Leadership	-.16
Judgment	-.16
Prudence	-.14
Fairness	-.09
Honesty	-.09
Kindness	-.09
Perspective	-.05
Humility	-.03
Love of learning	-.02

N = 115

* $p \leq .002$ (Bonferroni adjustment)

To summarize the findings, the modelling process indicated that the significant control variables related to primary and secondary stressors were: (a) living with care recipient, such that caregivers who lived with the care recipient reported higher levels of burden; (b) perceived stress, which was positively related to caregiver burden; (c) perceived financial difficulties, such that caregivers who reported income inadequacy tended to experience higher levels of burden; and (d) perceived limitation of leisure time, such that caregivers who felt they did not have enough leisure time reported higher levels of burden. Regarding character strengths as predictors, the results indicated that the best predictor of caregiver burden was hope. When the other predictors were kept constant, the burden score decreased by 3.62 points for each increment in hope.

In order to examine the mediating/moderating effect of character strengths, we ran a mediation and moderator model with the statistically significant primary and secondary stressors as predictors (i.e., living with care recipient, perceived stress, perceived financial difficulties, and perceived limitation of leisure time), hope as a mediating/moderating variable, and caregiver burden as the dependent variable. The results showed that hope did not moderate these relationships. However, hope mediated the effect of perceived stress on caregiver burden (see Fig. 1), with the other predictors being introduced

Table 4 Regression coefficients (B), standard error (SE), and standardized regression coefficients (β) with caregiver burden as the dependent variable

Predictor	B	SE B	β
Constant	41.41	17.6	
Hope	- 3.62	1.62	-.16*
Control variables			
Living with care recipient	6.39	3.13	.16*
Perceived stress	1.68	.25	.49**
Perceived financial difficulties	3.79	.99	.30**
Perceived limitation of leisure time	8.50	2.84	.23**
MMSE	- 2.21	1.53	-.12
Barthel Index	.06	.05	.09
Gender	4.24	2.94	.11
Age	.00	.17	.00
Marital status			
Single	- 6.49	5.75	-.14
Married	.22	5.08	.01
Divorced	- 3.66	6.46	-.05
Relationship with care recipient			
Son/daughter	- 7.09	4.95	-.20
Spouse	- 6.38	5.94	-.17
Level of education	1.41	.99	.12
Employment status			
Unemployed	7.82	4.04	.21
Employed	5.55	4.33	.17
Religion			
Practicing Catholic	- 4.31	5.01	-.12
Non-practicing Catholic	- 2.40	4.86	-.07
Atheist/agnostic	- 2.59	5.43	-.06
Time as main caregiver	-.41	.32	-.09
Number of people living with caregiver	- 2.04	1.09	-.17
Number of people sharing care tasks	1.22	.98	.09
Attends support group	-.82	2.65	-.02

N = 115. Dichotomous variables: Living with care recipient: No (0), Yes (1); perceived financial difficulties: No (0), Yes (1); perceived limitation of leisure time: No (0), Yes (1); gender: Male (0), Female (1); Attends support group: No (0), Yes (1); Reference categories: Marital status: Widowed; Relationship to care recipient: Other; Employment status: Retired/not working due to disability; Religion: Other

** $p < .01$; * $p < .05$

as covariates. The value for the total effect of perceived stress on caregiver burden was 1.92 ($p < .001$), with a direct effect of 1.76 ($p < .001$) and an indirect effect through hope of .16, 95% CI [.01, .38].

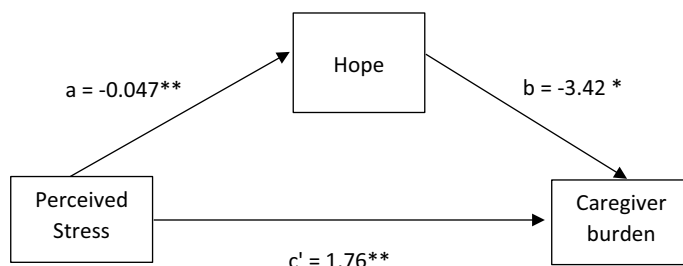


Fig. 1 Mediation model with parameter estimation testing the mediating effect of hope (M) on the relationship between perceived stress (X) and caregiver burden (Y). ** $p < .01$; * $p < .05$

4 Discussion

The purpose of this study was twofold. First, we aimed to identify the character strengths associated with caregiver burden and to determine—after controlling for contextual variables and primary and secondary stressors—which of them are the best predictors of burden. We expected to find a negative correlation between caregiver burden and character strengths, especially hope and zest, which seem to be the most important character strengths in relation to emotional problems. Second, we sought to analyze the mediating/moderating effects of the significant character strengths on the relationship between contextual variables, primary and secondary stressors, and caregiver burden.

Regarding contextual variables and stressors, the regression analysis showed that the significant variables were: living with the care recipient, perceived stress, perceived financial difficulties, and perceived limitation of leisure time. Caregivers who lived with the care recipient, who scored higher on perceived stress, who reported income inadequacy, and who felt they had insufficient leisure time tended to experience higher levels of burden. These results are consistent with the stress process model (Pearlin and Bierman 2013; Pearlin et al. 1990), and with previous research identifying significant predictors of caregiver burden (Huang et al. 2012; Kim et al. 2012; Park, et al. 2015; Sun et al. 2009). They are also in line with the study by Sun et al. (2009), who found that perceived income inadequacy was a stronger predictor of self-reported depressive symptomatology and anxiety in Alzheimer's caregivers and that it explained greater variance than did household income. These authors concluded that within the framework of the stress process model, financial strain was one of the main stressors disrupting the caregiver's life. This stressor should therefore be assessed when developing intervention programs with main caregivers of patients with dementia.

Regarding character strengths, simple correlation analysis showed a negative pattern of correlation, supporting the idea that more negative life experience is related to lower scores on these character strengths. In line with what we expected, hope and zest, as well as social intelligence and love, yielded significant and moderate correlation coefficients (after Bonferroni adjustment), indicating that caregivers who experience lower burden tend to be more optimistic about the future, to approach life with excitement and energy, to value close relationships with others, and to be aware of their own motives and feelings and those of other people. Of these character strengths, regression modeling indicated that hope was the most important predictor of burden.

Regarding the mediating/moderating effects of the significant character strengths, the results indicated that hope did not moderate the relationship between stressors and burden. However, when we tested the indirect effects we found that hope mediated the relationship between perceived stress and caregiver burden. This finding is consistent with the stress process model, which suggests that psychological values may buffer the outcomes of mental health (Pearlin and Bierman 2013; Pearlin et al. 1990).

Hope, also referred to as optimism, future-mindedness, or future orientation, appears in the VIA classification under the virtue of transcendence and is defined by Park et al. (2004) as expecting the best in the future and working to achieve it and/or believing that a good future is something that can be brought about. Thus, hope represents a cognitive, emotional, and motivational stance toward the future, such that the individual expects that desired events will occur, acts in ways believed to make them more likely, and feels confident about reaching goals (Peterson and Seligman 2004).

Our results are consistent with research showing that hope plays a significant role in emotional adjustment. Several studies have demonstrated that higher levels of hope are associated with fewer internalizing problems such as depression and anxiety disorders, that hope is a good predictor of well-being, life satisfaction, and happiness, and that it helps to foster good coping skills (Kwon et al. 2015; Lee et al. 2015; Martínez-Martí and Ruch 2014; Niemiec 2013; Ovejero et al. 2016; Park et al. 2004; Park and Peterson 2008; Proyer et al. 2011; Zhou et al. 2013). Other researchers have found that hope is negatively associated with burnout (Vetter et al. 2018), that it is an adaptive factor for older adults, due to its association with resilience (Polson et al. 2018), and that it plays an important role in successful coping with illness and in improving the quality of life of ill individuals (Duggal et al. 2016; Rousseau 2000). Positive results have also been obtained with adolescents and children. Hopeful students showed fewer symptoms of depression (Snyder et al. 2003), less psychological distress and school maladjustment (Gilman et al. 2006), and higher levels of self-esteem, well-being, and life satisfaction (Blanca et al. 2018; Snyder et al. 2003; Yang et al. 2016). This suggests that hope plays a key role in emotional adjustment across the lifespan.

Our findings also indicate that a high level of perceived stress is related to decreased hope, and that this lower level of hope is one of the paths through which stress may cause caregiver burden. Consequently, a more optimistic view of the future and the ability to see oneself as working to achieve one's goals may help caregivers to deal with the perceived negative impact of caregiving tasks. Conversely, a caregiver who feels burdened may view the future as devoid of hope and function poorly in terms of goal orientation. Hope-based intervention programs could therefore be useful for improving quality of life and reducing burden among caregivers. In our view, cognitive-behavioral interventions may be particularly well suited to this purpose, due to the strong emphasis they place on goal setting, strategy generation, and the modification of negativistic beliefs regarding goal attainment (Snyder et al. 2000). Snyder et al. (2000) and Snyder (2002) propose that hope has two goal-directed components: pathways thoughts, reflecting the perceived ability to generate plausible goal routes, and agency thoughts, referring to the motivation and determination to achieve one's goals. Cognitive-behavioral interventions based on hope can help individuals to envision alternative pathways when an existing route is blocked, or to increase the number of possible pathways for achieving their specific goals (Snyder et al. 2000).

We also consider that any such intervention should include specific activities designed to develop hope and promote positivity, as these could help caregivers to deal with the stress they perceive. A number of proposals have been made in this regard. For example, Rustøen et al. (2011) described a hope intervention (the HOPE-IN) for cancer patients,

combining cognitive, affective, and behavioral techniques. They found that the HOPE-IN increased levels of hope and decreased levels of psychological distress. Similarly, Herth (2000) developed the Hope Intervention Program for patients with a first recurrence of cancer, including several activities centered on four attributes of hope (experiential, relational, spiritual, and rational thought processes): Searching for hope (e.g., becoming aware of and expressing fears, questions, expectations and hopes, and identifying areas of hope and threats to hope); connecting with others (e.g., family members are invited, while participants explore ways to establish a sense of connectedness with others and to identify available resources); expanding the boundaries (e.g., thinking about suffering and the meaning of life, and finding sources of strength); and building the hopeful veneer (e.g., learning strategies and techniques about cognitive reframing, or goal readjustment to enhance hope). Herth (2000) found that this program increased hope and quality of life in cancer patients, both immediately after the intervention and during follow-up at 3, 6, and 9 months.

Although the abovementioned interventions were developed to enhance hope among cancer patients, the positive activities they use may be adapted to the caregiver setting and to the specific needs of individual carers. Overall, a hope-based program might help caregivers to cope more effectively by fostering in them greater optimism about the future and enhancing their capacity for goal-directed behavior. This could be achieved through activities that help them to become more aware of their feelings related to caregiving, to express optimism, to reflect on their own strengths, to identify objectives and goals, to implement strategies for achieving them, and to be more confident about their ability to put these into practice. In accordance with the positive-activity model (Lyubomirsky and Layous 2013) these activities would involve the activation of positive emotions, positive thoughts, and positive behavior, and they would help caregivers to satisfy their basic psychological needs, thus boosting their well-being.

The present study has several limitations which need to be acknowledged. First, the data were obtained using self-report questionnaires. Second, participants were recruited by means of convenience sampling through several associations for families of people with Alzheimer's and other dementias, thereby restricting the generalizability of the findings. Third, caregivers who scored high on hope may be more likely to self-select into being caregivers, which may bias the sample. Fourth, the use of a cross-sectional design means that no causal relationships can be inferred from the results. Further studies are therefore needed to ascertain causality.

To sum up, our study provides evidence of the relationship between caregiver burden, contextual variables, stressors, and character strengths. Overall, the results showed that the caregivers who experience the greatest burden are those who live with the care recipient, who score higher on perceived stress, who feel their leisure time is limited, and who perceive more financial strain. We also found that caregivers who report less burden tend to score higher on hope, zest, social intelligence, and love. However, a more refined analysis indicated that hope was the best predictor of caregiver burden and that hope mediated the relationship between perceived stress and caregiver burden. These results may have both clinical and research implications. Regarding the former, the fact that higher levels of hope are related to lower levels of burden suggests that hope-based programs could enhance positive emotions and reduce the perceived negative impact of caregiving. The finding that hope has a mediating effect on the relationship between perceived stress and caregiver burden also opens up a new line of research regarding the role of character strengths in the stress process model. Future studies should therefore examine the role of hope and other character strengths in this model, analyzing their direct and/or mediating effects on the relationship between stressors and other health outcomes.

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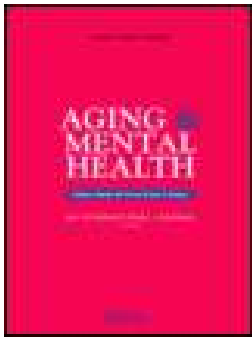
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The role of character strengths in predicting gains in informal caregivers of dementia

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ABSTRACT

Objectives: Although providing care to a person with dementia can have a negative impact, caregivers may also perceive certain benefits and gains through the tasks they perform. Our aim here was to study caregiver gains within the framework of positive psychology, exploring the predictive power of character strengths, while controlling for sociodemographic variables and variables related to the dementia and caring.

Methods: A sample of 105 main caregivers of people diagnosed with dementia completed a socio-demographic questionnaire, the Gain in Alzheimer care Instrument and the Values in Action Inventory of Strengths. Correlational analysis and hierarchical regression were conducted.

Results: Eighteen character strengths were positively and significantly correlated with gain scores. Regression analysis indicated that level of education was negatively related to gain scores. In addition, hope was the character strength which best predicted the gain score, such that caregivers who scored higher on hope tended to perceive greater benefits from their role.

Conclusion: The results suggest that hope may play an important role in relation to the perceived gains of caregiving. Intervention programmes based on positive psychology and aimed at enhancing character strengths, especially hope, could help caregivers to identify the positive aspects of their caring role.

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A caregiver is the person responsible for providing care to someone whose health is impaired by sickness or old age (Settineri, Rizzo, Liotta, & Mento, 2014). This task often falls to informal caregivers, that is, the impaired person's partner, relatives or friends, who offer unpaid assistance with activities of daily living.

The negative aspects of providing informal care to a person with dementia are well known and have been widely reported in the caregiving literature (e.g. Chiao, Wu, & Hsiao, 2015). By contrast, fewer studies have examined the positive aspects of caregiving. Empirical evidence shows that the caregiving role may increase personal satisfaction and growth, enable the development of skills, and improve relationships with the care recipient and others (Rapp & Chao, 2000). Kramer (1997a) used the term *gain* to refer to the extent to which the caregiving role is perceived as enhancing an individual's life space and as being enriching, including any positive affective or practical benefits that are experienced as a result of becoming a caregiver.

Cohen, Colantonio, and Vernich (2002) found that 73% of informal dementia caregivers identified at least one positive aspect of their caregiving role, the most cited being companionship, a feeling of fulfilment or reward, enjoyment and carrying out a duty. In addition, more positive feelings about caring were associated with lower caregiver burden, less depression and better self-rated health.

Netto, Goh, and Yap (2009) suggested three main categories of gains derived from the caregiver role: personal growth, which refers to internal changes such as increased self-awareness and becoming more patient, understanding,

resilient, and knowledgeable; gains in relationships, which are related to improved skills in interacting with the care recipient and other people (family, elderly people, etc.); and higher-level gains, such as a stronger sense of spirituality, a deeper relationship to God, or a more enlightened perspective in life. Based on these categories, Yap et al. (2010) designed the Gain in Alzheimer care INstrument (GAIN) to measure the benefits of caring for a person with dementia. In our country, Spain, this scale has been validated with informal caregivers of people with dementia (Fabà & Villar, 2013).

Although some researchers have failed to find evidence of a relationship between GAIN scores and several sociodemographic and care variables (Fabà & Villar, 2013), Liew et al. (2010) found that GAIN scores were higher among those caregivers who did not work, who had been caregivers for more than three years, who spent more than 60% of their time per week on caregiving tasks, who had daily contact with the patient, who had few or no financial difficulties, and who attended caregiver educational and support group programmes. Additionally, it seems that caring for a patient in the more advanced stages of dementia also confers greater gains. Liew et al. (2010) suggested that more frequent or close contact with the person with dementia offers caregivers increased opportunities to feel empowered, insofar as they may develop effective strategies for providing care.

The empirical evidence has also shown that GAIN scores are positively related to well-being, a sense of caregiver competence, the use of caregiving strategies focused on

encouragement and active management, and religiosity (measured on a scale from no faith to very strong faith); conversely, gain scores are inversely associated with caregiver burden, depression, mental health problems, and criticism as a caregiving strategy (Cheng, Lam, Kwok, Ng, & Fung, 2013; Fabà & Villar, 2013; Liew et al., 2010; Yap et al., 2010). Although they did not measure gains with the GAIN, Fabà, Villar, and Giuliani (2017) found that caregiver gains were negatively associated with caregiver burden and depression, and positively related with satisfaction with life, suggesting that informal dementia caregivers who experience more gains have a lower level of caregiver burden and are more satisfied with their lives.

Gains as a positive aspect of caring could be studied within the framework of positive psychology, a field of psychology which focuses on analysing the factors that encourage people, communities and societies to flourish (Seligman & Csikszentmihalyi, 2000). Noteworthy in this context is the classification of character strengths developed by Peterson and Seligman (2004). Character strengths are positive psychological traits that can be observed in thoughts, feelings, conations, and behaviours. Although they are relatively stable over time, they may change as a result of interventions or important events. These characteristics have a moral value and confer benefits both to the individual concerned and to others (Niemiec, 2013; Park, Peterson, & Seligman, 2004).

Peterson and Seligman (2004) developed a classification of 24 character strengths, organizing them in six blocks of virtues: wisdom and knowledge, courage, humanity, justice, temperance, and transcendence. This classification, which they called Values in Action (VIA), considers the following strengths: creativity, curiosity, judgment, love of learning, perspective, bravery, honesty, perseverance, zest, love, kindness, social intelligence, teamwork, fairness, leadership, forgiveness, humility, prudence, self-regulation, appreciation of beauty, gratitude, hope, humour, and spirituality. Peterson and Seligman (2004) also developed an instrument to measure these 24 character strengths, the VIA Inventory of Strengths.

The empirical evidence has shown that higher scores on character strengths are associated with positive outcomes such as happiness, life satisfaction, positive affect, health, adaptive coping, emotional intelligence, academic achievement, and job satisfaction, and conversely that they are negatively related to psychological maladjustment, including depression, anxiety, stress, and negative affect (Azañedo, Fernández-Abascal, & Barraca, 2014, 2017; Blanca, Ferragut, Ortiz-Tallo, & Bendayan, 2018; Harzer & Ruch, 2015; Kim et al., 2018; Niemiec, 2013; Ovejero, Cardenal, & Ortiz-Tallo, 2016; Ros-Morente, Alsinet-Mora, Torrelles-Nadal, Blasco-Belled, & Jordana-Berenguer, 2017; Tehranchi, Neshat Doost, Amiri, & Power, 2018). Hope, zest, gratitude, love and curiosity are the strengths most strongly associated with happiness and well-being (Park et al., 2004; Ovejero et al., 2016). Given that gains are related to the positive aspects of caregiving, it is plausible that character strengths are also linked to gains in informal dementia caregivers, such that the stronger the endorsement of character strengths the more gains the caregiver perceives. However, to the best of our

knowledge, there are no previous studies that have examined this issue.

Our goal, therefore, was to explore the predictive power of character strengths in relation to caregiver gains in informal dementia caregivers, controlling for other variables that might influence this relationship, namely caregiver sociodemographic variables and variables related to the dementia and caring. Knowledge about which character strengths are more likely to predict gains in dementia caregivers could be used to design positive intervention programmes aimed at improving the caregiving experience.

Design and methods

Participants

One-hundred and five main caregivers (22 males and 83 females) of people diagnosed with dementia participated in the study. They ranged in age from 35 to 82 years ($M = 56.12$, $SD = 12.67$) and were recruited through 11 different associations for families of people with Alzheimer's and other dementias in the province of Malaga, Spain. Participants had to meet the following inclusion criteria: (1) age 18 years or older; (2) having been the main caregiver for at least six months; (3) care recipient has a diagnosis of dementia; (4) belonging to one of the abovementioned associations; and (5) giving their prior informed consent. The majority of participants were Spanish (97.1%), married (73.3%), Catholic (78.1%), lived with the care recipient (79%), were the son or daughter of the care recipient (66.7%), and did not attend a support group (72.4%). Forty-four percent of participants were employed. Regarding their level of education, 8.6% had received no or very limited schooling, 32.4% had completed primary school, 23.8% secondary school, and 35.2% had university qualifications. The time during which they had been the main caregiver ranged from 1 to 28 years (mean = 4.93, $SD = 3.88$). Care recipient scores on the Barthel Index ranged from 0 to 100 ($M = 63.89$, $SD = 29.20$).

Instruments

Sociodemographic questionnaire

This questionnaire gathered sociodemographic information and data about caregiving and dementia-related variables. All these variables were included in the analysis as control variables, covering the following aspects: gender, age, marital status, level of education, employment status, religion, religiosity (measured on a six-point scale from no faith to very strong faith), relationship to the care recipient, whether or not the caregiver lived with the care recipient, time as main caregiver, whether or not the caregiver attended a support group, whether or not the caregiver perceived financial difficulties (measured on a six-point scale from no difficulty to very difficult), and activities of daily living of the care recipient, measured by the Barthel Index.

Gains. Gains associated with caring for the person with dementia were assessed using the Gain in Alzheimer care INstrument (GAIN; Yap et al., 2010), in its Spanish version (Fabà & Villar, 2013). The scale includes 10 items rated on a five-point Likert scale and covering three kinds of benefits: personal growth, gains in relationships and higher-level gains. The GAIN comprises a single factor and a total score

is obtained by summing the scores for each item. Cronbach's alpha coefficient in the present sample was .88. Higher scores are indicative of more perceived gains from caregiving tasks.

VIA Inventory of Strengths (VIA; Peterson & Seligman, 2004; Peterson & Park, 2009). The 24 character strengths listed above in the introduction were assessed using the 72-item Spanish version of this questionnaire (VIA-72), provided and validated by the VIA Institute on Character. Each strength (creativity, curiosity, judgment, love of learning, perspective, bravery, perseverance, honesty, zest, love, kindness, social intelligence, teamwork, fairness, leadership, forgiveness, humility, prudence, self-regulation, appreciation of beauty, gratitude, hope, humour, and spirituality) has three self-rated items that use a 5-point Likert response format (1 = very much unlike me; 5 = very much like me). The score obtained for each strength is the average across the three items (range 1 to 5). In the present sample internal consistency coefficient ranged from .45 to .84. Higher scores are indicative of a stronger presence of the specific strength.

Procedure

The research team contacted several associations for families of people with Alzheimer's and other dementias in the province of Malaga, informing them about the study. Once the centre agreed to collaborate, caregivers were invited by their own centre to participate, and those who accepted received the questionnaires. The response rate for the study was 65.6%. Participants completed the questionnaires in a single one-hour session, after signing informed consent. The Experimentation Ethics Committee of the University of Malaga approved the study, which was carried out in accordance with the Declaration of Helsinki.

Data analysis

In order to reduce the number of predictors and to select only those which were statistically significant for the next step (due to the number of predictors and the limited sample size), we began by analysing the association between GAIN scores and the sociodemographic variables and dementia- and caring-related variables. We performed a multiple regression analysis with gender, age, marital status, level of education, employment status, religion, religiosity, relationship to the care recipient, living with the care recipient, time as main caregiver, Barthel index, attending a support group and perceived financial difficulties as predictors.

Second, we calculated Pearson correlation coefficients in order to analyse the relationship between GAIN scores and scores on character strengths. According to Cohen's criterion (Cohen, 1988), a coefficient of $|.10|$ is considered a small correlation, $|.30|$ a moderate correlation and $|.50|$ or higher a strong correlation.

Third, and in order to identify which character strengths were predictors of GAIN scores, we performed a hierarchical regression analysis, introducing the predictors in two blocks. In the first block we included the significant predictors related to sociodemographic and dementia- and caring-related variables. In the second block we added those character strengths which showed a significant correlation with GAIN scores. All significant correlation values were higher than .20.

A power analysis indicated that for a multiple regression analysis with 19 predictors a sample of 99 participants would be needed to detect an effect of 0.25 with 80% statistical power and an alpha level of .05. Also as regards sample size, recent Monte Carlo simulation studies have shown that linear regression models require only two subjects per variable for adequate estimation of regression coefficients and standard errors (Austin & Steyerberg, 2015).

Results

Table 1 shows the standardized coefficients of the multiple regression analysis with the predictors related to the socio-demographic and dementia- and caring-related variables and with gain scores as the dependent variable. The only statistically significant variable was level of education, which was negatively correlated with gain scores.

Table 2 shows the correlation coefficients between caregiver gains and the 24 character strengths. Eighteen character strengths were positively and significantly correlated

Table 1. Standardized regression coefficients from the multiple regression analysis with GAIN scores as the dependent variable and sociodemographic variables and dementia- and caring-related variables as predictors.

Variables	Beta	<i>t</i>	<i>p</i>
Gender (Female)	−0.17	−1.60	.11
Age	−0.04	−0.21	.83
Marital status (Married)	0.11	1.10	.28
Level of education	−0.31	−2.56	.01
Employment status (Employed)	0.08	0.68	.50
Religion (Catholic)	0.06	0.53	.60
Religiosity	0.12	1.01	.31
Relationship to care recipient (Son/Daughter)	−0.02	−0.11	.91
Living with care recipient (Yes)	−0.11	−1.05	.30
Time as main caregiver	0.10	1.01	.32
Barthel Index	−0.03	−0.24	.81
Attending support group (Yes)	−0.01	−0.02	.98
Perceived economic difficulties	−0.12	−1.09	.28

Note: N = 105. Coding: Gender: Female (1), Male (0); Marital status: Married (1), other (0); Employment status: Employed (1), unemployed (0); Religion: Catholic (1), other (0); Relationship to care recipient: Son/Daughter (1), other (0); Living with care recipient: Yes (1), No (0); Attending support group: Yes (1), No (0).

Table 2. Correlations between GAIN scores and each of the 24 character strengths (VIA scores).

Strengths	Correlation
Hope	.51**
Gratitude	.42**
Zest	.39**
Teamwork	.39**
Love	.37**
Curiosity	.33**
Creativity	.31**
Judgment	.29**
Leadership	.29**
Social Intelligence	.28**
Spirituality	.27**
Forgiveness	.27**
Appreciation of Beauty	.27**
Kindness	.25**
Prudence	.25**
Bravery	.24*
Humour	.24*
Honesty	.23*
Self-Regulation	.17
Humility	.16
Perspective	.12
Fairness	.08
Perseverance	.06
Love of Learning	.02

Note: N = 105. ** $p < .01$; * $p < .05$.

Table 3. Standardized regression coefficients from hierarchical regression analysis, R-squared and increment in R-squared with GAIN scores as the dependent variable.

Variables	Stage 1	Stage 2	F	R ²	ΔR ²
Block 1. Control variables			8.37**	.08	
Level of education	−.27**	−.31**			
Block 2. Character strengths			3.15**	.41	.33*
Hope		0.45**			
Gratitude		0.10			
Zest		0.05			
Teamwork		0.07			
Love		0.03			
Curiosity		0.03			
Creativity		−0.18			
Judgment		0.22			
Leadership		0.15			
Social Intelligence		−0.10			
Spirituality		0.15			
Forgiveness		−0.02			
Appreciation of Beauty		−0.20			
Kindness		−0.16			
Prudence		−0.10			
Bravery		0.07			
Humour		0.05			
Honesty		0.07			

Note: N = 105. * $p < .05$, ** $p < .001$.

with gain scores, and these were the strengths entered in block 2 of the hierarchical regression.

Table 3 shows the results of the two stages of the hierarchical regression analysis. In the first block we included level of education. In the second block we included the character strengths that yielded a significant correlation with gain scores. The increment in R-squared was statistically significant. In the final stage the significant predictors were level of education and hope.

Discussion

The aim of this study was to explore the predictive power of character strengths in relation to caregiver gains, controlling for other variables that might influence this relationship. We began by analysing the association between GAIN scores and sociodemographic variables and dementia- and caring-related variables. Then, in order to analyse the relationship between caregiver character strengths and gains, we performed a simple correlation analysis between GAIN scores and scores on the 24 strengths. Finally, we performed a hierarchical regression in order to identify which character strengths were predictors of caregiver gains, controlling for the abovementioned variables.

Regarding sociodemographic variables and dementia- and caring-related variables, the results showed that the only significant variable was level of education, which was negatively correlated with gain scores. Thus, caregivers with a lower level of education tended to perceive greater benefits from caregiving. This negative association has also been found in previous research (Kramer, 1997b; Picot, 1995). In addition, a lower educational level has been associated with lower levels of caregiver stress (DiBartolo & Soeken, 2003). Kramer (1997b) suggested that highly educated people may perceive a more striking status differential between their role as a professional and their role as caregiver. It is also possible that highly educated caregivers are accustomed to being engaged in more intellectually stimulating activities, which may make it difficult for them to perceive benefits in daily caring tasks (Kramer, 1997b). These results suggest that intervention programmes should

specifically target caregivers with a high educational level so as to help them identify gains and reduce the stress they experience as a result of their caregiving tasks.

The results of the simple correlation analysis showed that 18 strengths were positively and significantly correlated with GAIN scores, and seven of them (hope, gratitude, zest, teamwork, love, curiosity, and creativity) yielded moderate or high correlation values (above .30). Overall, these results are consistent with our expectation that the stronger the endorsement of strengths the more the caregiver would perceive positive aspects related to caregiving.

The results from the hierarchical regression analysis, which eliminates the overlap among predictors, indicated that the only significant predictor of gain scores was hope, with a positive relationship. Park et al. (2004) define hope as expecting the best for the future and working to accomplish it. Hopeful people are optimistic, believe that things could be better, and usually focus on opportunities and on the bright side of life. Consequently, caregivers with this positive outlook also tend to focus on the positive opportunities that caregiving offers them in terms of personal growth and gains. This is consistent with the findings of several studies about character strengths that have highlighted the important role of hope, which has been positively related to well-being and happiness (Blanca et al., 2018; Niemiec, 2013; Niemiec, Shogren, & Wehmeyer, 2017; O'Sullivan, 2011; Ovejero et al., 2016; Park & Peterson, 2009; Peterson, Ruch, Beerman, Park, & Seligman, 2007), life purpose (Lee, Foo, Adams, Morgan, & Frewen, 2015), self-compassion (Yang, Zhang, & Kou, 2016), academic achievement (Niemiec, 2013; Park & Peterson, 2009), self-esteem (Ciarrochi, Heaven, & Davies, 2007), positive attributional style (Ciarrochi et al., 2007), and self-efficacy and eustress (O'Sullivan, 2011). Furthermore, hope has been shown to be negatively associated with psychological problems such as anxiety and depression (Niemiec, 2013; Park & Peterson, 2008; Rajandram et al., 2011), burnout (Vetter, Vetter, & Fowler, 2018), and school maladjustment and psychological distress (Gilman, Dooley, & Florell, 2006; Niemiec, 2013). It has been suggested that hope can buffer the negative effects of trauma and stress (Niemiec, 2013; Park & Peterson, 2009), and it appears to be a key cognitive-motivational construct in the development of a positive psychological outlook among youth (Valle, Huebner, & Suldo, 2006).

In the context of hope theory, Snyder (2004) has also highlighted the importance of hope in predicting positive outcomes in health, education and sport. From this perspective, hope is the perceived capacity to achieve goals and to generate plausible routes for doing so (pathways thinking), which implies also the motivation and energy to use those pathways towards a goal (agency thinking) (Snyder, 2002; Snyder et al., 2000). Research has found that high-hope people tend to deal with stressors more effectively, to produce more pathways and to be better at generating alternative routes (Snyder, 2000). Furthermore, high-hope people are more likely to have close connections with other people and to show more interest in the goals of others (Snyder, Cheavens, & Sympson, 1997). Given these findings, it is reasonable to assume that high-hope caregivers may have more confidence in their abilities and may generate more strategies for coping effectively with

stressors associated with caring, resulting in a more positive view of the future.

The present results suggest that intervention programmes based on positive psychology and aimed at enhancing character strengths could help caregivers to identify the positive aspects of caring. A key strength to target in the context of such programmes would be hope, the consolidation of which could help to boost caregiver gains. Indeed, expecting the best for the future and being able to work towards goals may enable caregivers to recognize potential benefits of their role. In this context, the aforementioned hope theory (Snyder, 2000, 2002; Snyder et al., 2000) may also provide a framework for the design of intervention programmes aimed at increasing pathways thinking and enhancing motivation to achieve desired goals.

This study has a number of limitations that need to be considered. First, participants were recruited through associations for families of people with dementia, restricting the generalizability of the results. Second, although recent studies have shown that linear regression models require only two subjects per variable for adequate estimation of regression coefficients (Austin & Steyerberg, 2015), we believe that the sample size used in this study is small and may also limit the generalizability of results. A further limitation relates to the correlational nature of the data, which prevents us from making inferences about causal relationships.

To sum up, the present study explores the relationship between character strengths and caregiver gains, providing evidence about the existence of a positive association with the majority of the strengths considered. More specifically, hope is the strength with the greater predictive power in relation to caregiver gains. The results show that caregivers who scored higher on hope tend to perceive more benefits from their caregiving tasks. This suggests that intervention programmes based on positive psychology and aimed at enhancing strengths, especially hope, could help caregivers to identify the positive aspects of the caring role.

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Disclosure statement

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Life satisfaction and the mediating role of character strengths and gains in informal caregivers

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Accessible Summary

What is known on the subject?

The role of informal caregiver can have both negative and positive consequences for a person's well-being. The main theoretical framework for explaining these consequences is the stress process model, which considers contextual variables, stressors and mediating/moderating factors. The latter are psychosocial factors such as coping strategies, personal mastery, social support or beliefs and values which may influence caregiver well-being. The perception of gains in caregiving has also been proposed as a mediating variable since it may act as a coping strategy. However, few studies have examined values and perceived gains as mediating variables with life satisfaction as the outcome.

What the paper adds to existing knowledge?

This study explores the role of character strengths and caregiver gains as mediators between stressors and life satisfaction in informal caregivers of persons with dementia. The results identify hope as a key character strength, its lack being one pathway through which stress may lead to low life satisfaction and low perceived gains from caregiving.

What are the implications for practice?

Caregivers who experience a lack of hope may be less able to generate goals and be less motivated to achieve them. Our findings are relevant to gerontological nursing based on the Senses Framework as they confirm the importance of the senses of purpose and achievement. Nursing and care staff can play an active role in helping informal caregivers to meet their goals by promoting these two senses, thereby fostering a more positive caregiving experience.

Abstract

Introduction: Being an informal caregiver can have both negative and positive consequences for well-being. Within the framework of the stress process model, few studies have examined values and perceived gains of caregiving as mediating variables of life satisfaction.

Aim: To explore the role of character strengths and perceived gains as mediators in the association between life satisfaction and primary and secondary stressors in informal caregivers of persons with dementia.

Method: Participants were 112 informal caregivers. Hierarchical regression, correlation and mediation analyses were performed.

Results: Lower life satisfaction was associated with being female, unmarried, caring for someone with greater cognitive impairment, a higher level of stress, having restricted leisure time and perceiving financial difficulties. Hope mediated the associations between perceived stress and both life satisfaction and perceived gains of caregiving.

Discussion: Hope is a key strength and its lack is one pathway through which stress may cause low satisfaction and low perceived gains from caregiving.

Implications for practice: Without hope, it is difficult for caregivers to generate goals and be motivated to achieve them. Nursing and care staff should aim to promote a sense of purpose and achievement among informal caregivers so as to foster a more positive caring experience.

KEYWORDS

hope, indirect effect, love, perceived stress, senses framework, stress process model

1 | INTRODUCTION

Dementia is characterised by a progressive global deterioration in cognitive ability and the capacity for independent living. It affects different cognitive functions, including memory, learning, orientation, language, comprehension and judgement, and it generally affects older adults (Alzheimer's Association, 2016; Prince & Jackson, 2009). Most people with dementia require some form of personal care as the disease progresses (Prince et al., 2013; Prince & Jackson, 2009).

An informal caregiver is an unpaid person, usually, a friend or relative, who assists another person with reduced health to fulfil his or her needs. The role of caring for a person with dementia can have several negative consequences, including burden, depression, anxiety, stress, social isolation, decreased well-being and quality of life, sleep difficulties and a heightened risk of cardiovascular disease (Conde-Sala et al., 2010; Kim et al., 2012; Raivio et al., 2015; Roepke et al., 2012; Settineri et al., 2014). Because dementia-related symptoms worsen progressively over time, informal caregivers will have to assume increased responsibility as the person with dementia deteriorates, and as a result, they are likely to experience increased stress and burden (Chiao et al., 2015). Research also suggests, however, that informal caregiving may have positive consequences and benefits, such as finding meaning through care, increased life satisfaction, personal and spiritual growth, and improved interpersonal relationships (Cheng et al., 2013; Netto et al., 2009; Rapp & Chao, 2000; Sanders, 2005). In this context, the term gains refer to positive appraisals experienced as a result of the caregiving role (Kramer, 1997).

The main theoretical framework for explaining the consequences of the caregiving experience is the stress process model (Pearlin & Bierman, 2013; Pearlin et al., 1990). This model considers various factors which may interact and determine how a person reacts to this role. These are as follows: (1) contextual factors, such as the caregiver and care recipient's sociodemographic characteristics (e.g. gender, age or educational level), or variables related to caregiving (e.g. how long a person has fulfilled this

role); (2) primary stressors, which refers to stress factors directly related to the health of the care recipient and the degree of the care needed, which may be objective (e.g. cognitive impairment or challenging behaviour) or subjective (e.g. perception of overload); (3) secondary stressors, that is, stress factors beyond the caregiving role, such as restriction of social life, difficulties at work or financial strain; and (4) mediating and moderating factors that can determine how well caregivers cope with their role and which may account for variability in the health consequences they experience. Among the latter, Pearlin and Bierman (2013) include factors such as coping strategies, personal mastery, social support, beliefs and values. Contextual variables, stressors, and mediators and moderators may influence health outcomes such as well-being, depression, anxiety, burden, etc.

The direct relationship between contextual factors, stressors and health outcomes has been widely studied in informal caregivers of persons with dementia. For example, greater caregiver burden has been related to being female, older and a spousal caregiver, having a lower educational level, having spent longer in the caregiving role, living with the care recipient, not having assistance (Chiao et al., 2015; Kim et al., 2012), a more advanced stage of disease and more behavioural problems in the care recipient, and factors such as lower income, economic difficulties and restriction of leisure time (Chiao et al., 2015; Del-Pino-Casado & Ordóñez-Urbano, 2016; Park et al., 2015; Sun et al., 2009). Research also shows that caregiver burden is positively associated with depression and anxiety (Chiao et al., 2015), which in turn are negatively related to self-rated health, perceived gains of caregiving, quality of life, life satisfaction and well-being (Abdollahpour et al., 2014; Chappell & Reid, 2002; Fabà et al., 2017; Yap et al., 2010). In addition, lower life satisfaction in caregivers has been linked to being female, unmarried, unemployed, dedicating more hours to care, limited social activity, low income, low social support and social resources, low self-esteem, higher stressfulness appraisals, fewer perceived benefits associated with caregiving and more personal health problems (Borg & Hallberg,

2006; Chappell & Reid, 2002; Fabà et al., 2017; Haley et al., 2003; Niimi, 2016; Wakabayashi & Kureishi, 2018).

Research with informal caregivers of people with dementia has also examined the mediation/moderation effects of several variables (e.g. religiosity, self-efficacy, personal mastery, social support and coping styles) in relation to mental and physical health (McLennon et al., 2011), depression (Cheng et al., 2013; Mausbach et al., 2012) and caregiver burden (Fauziana et al., 2018; García-Castro et al., 2020; Wang et al., 2018). As already mentioned, these mediators and moderators would explain individual differences in how caregivers cope with their role (Pearlin & Bierman, 2013). However, although there is abundant evidence in relation to coping, social support or mastery, little is known about the role of beliefs and values as mediating/moderating variables in the relationship between stressors and health outcomes. Regarding values, Pearlin and Bierman (2013) suggest that the influence of a stressor may vary according to whether or not it is relevant to a person's values. In this context, the Values in Action (VIA) classification proposed by Peterson and Seligman (2004) provides a framework for analysing the role of values from the perspective of positive psychology (García-Castro et al., 2020). The VIA classification identifies several character strengths or positive personality traits that determine how individuals think, feel and behave. According to Peterson and Seligman (2004), these character strengths are measurable and relatively stable over time, although they are also flexible enough to be developed. These authors identified 24 character strengths, which they labelled as follows: appreciation of beauty and excellence, creativity, bravery, fairness, curiosity, gratitude, forgiveness, hope, honesty, humour, humility, kindness, judgment, love, leadership, love of learning, perspective, perseverance, self-regulation, prudence, spirituality, social intelligence, teamwork, and zest. Overall, research has shown that higher levels of character strengths are linked to lower levels of perceived stress, and also that strengths may function as a protective factor against perceived stress (Duan, 2016; Li et al., 2017). In this context, the endorsement of character strengths may determine how individuals react to the caregiving role, mediating the relationship between stressors and health outcomes, such that individuals who endorse certain character strengths may be able to deal more effectively with care-related stressors. A recent study by García-Castro et al. (2020) found that of the 24 strengths, hope was the most relevant in predicting caregiver burden and that it had a mediating role between perceived stress and burden, such that higher levels of perceived stress are associated with decreased hope, and this lower level of hope is one of the pathways through which stress may cause a burden.

Although mediating effects in the association between stress and negative outcomes have been extensively studied, very few studies have focussed on positive outcomes such as life satisfaction as a cognitive measure of subjective well-being. Furthermore, those studies which have considered such outcomes did not include a variety of primary and secondary stressors. For example, Khushaifan and El Keshky (2017) investigated the association between depression and life satisfaction with social support as a mediator, whereas Morano (2003) explored how appraisal of burden and satisfaction, and the

perception of support mediate the effects of caregiving on somatic complaints, depression, personal gain and life satisfaction. To the best of our knowledge, there are no studies analysing the mediating role of character strengths in the relationship between stressors and life satisfaction in informal caregivers of people with dementia. In the general population, research has shown that character strengths as a whole are positively related to psychological adjustment, quality of life, life purpose and life satisfaction, although hope, love, zest, curiosity and gratitude are the strengths most strongly associated with life satisfaction (Blanca et al., 2018; Lee et al., 2015; Ovejero et al., 2016; Park & Peterson, 2006a,b; Proyer et al., 2011).

From within the framework of positive psychology there is also evidence that caregivers who more strongly endorse certain strengths perceive more positive aspects of caregiving. Specifically, García-Castro et al., (2019) found that hope, zest, gratitude, curiosity, love, teamwork and creativity had moderate or high correlations with perceived gains, although once the overlap between them was eliminated, hope emerged as the best predictor. It should be noted that the positive aspects or perceived gains of caregiving have been proposed as a mediator variable in the stress process model, suggesting that the ability to find meaning and detect positive aspects in caregiving may act as a coping strategy, enabling the caregiver to deal more effectively with care-related stressors (Cheng et al., 2013; Fauziana et al., 2018; McLennon et al., 2011). However, the mediating effect of perceived gains in the relationship between stressors and health outcomes is limited, since studies are scarce and have included a small number of stressors or have focussed on the mediating effect in the relationship between outcome variables (Fauziana et al., 2018; McLennon et al., 2011). Further research in this regard is therefore warranted. With that in mind, it is worth noting that enhancing the positive experience of caregiving is one of the aims of the Senses Framework and relation-centred care, a platform for good practices in the care of older people proposed by Nolan et al., (2006). These authors suggested the need to create and sustain an enriched environment of care in which the needs of all participants (i.e. nurses, care recipients and caregivers) are acknowledged and addressed in order to improve the care provided. In this enriched environment, all those involved should experience a sense of security, belonging, continuity, purpose, achievement and significance, such that they are all able to flourish and grow.

Given the lack of studies with life satisfaction as an outcome, and considering values and perceived gains of caregiving as mediating variables within the framework of the stress process model, the aim of the present study was to explore the role of strengths and perceived gains as potential mediators in the relationship between life satisfaction and primary and secondary stressors in informal caregivers of individuals with dementia, controlling for contextual variables. Our hypothesis was that primary and secondary stressors would be associated with life satisfaction indirectly through character strengths, which in turn would be associated with perceived gains, determining the level of life satisfaction. To address the study objective we first identify the contextual variables (e.g. age, gender, etc.), the primary stressors (independence for activities of daily living and cognitive impairment in the care recipient, and

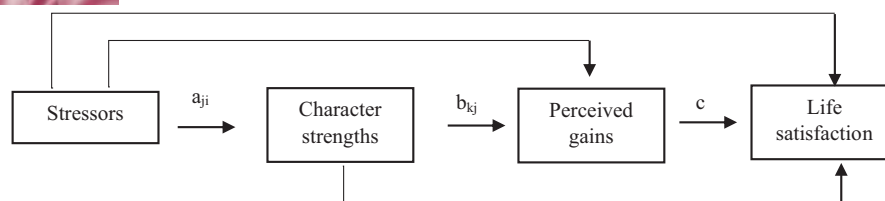


FIGURE 1 Proposed mediation model, controlling for contextual variables: predictors (primary and secondary stressors), mediators (character strengths and perceived gains) and outcome (life satisfaction)

caregiver's perceived stress) and the secondary stressors (perceived financial difficulties, restriction of leisure time and difficulties at work) which are statistically significant in predicting life satisfaction. We expected to find that lower scores on life satisfaction are related to greater dependency and impairment in the care recipient, and a higher level of perceived stress and more perceived financial difficulties, difficulties at work and restriction of leisure time in the caregiver. We then analyse the relationship between life satisfaction and strengths in order to identify the strengths with the highest correlations. Here we expected to find similar results to those reported previously in the general population, namely higher correlations between life satisfaction and hope, love, zest, gratitude and curiosity. Finally, having identified the particular contextual variables, stressors and mediators that contribute most to life satisfaction, we test a mediation model consistent with the stress process model (Figure 1).

2 | MATERIALS AND METHOD

2.1 | Participants

Participants were 112 informal caregivers (87 women and 25 men) of individuals diagnosed with dementia who were recruited through various day centres for people with Alzheimer's and other dementias (Malaga, Spain). Their age ranged from 35 to 82 years old, with a mean of 56.20 ($SD = 12.99$). In order to be eligible for inclusion they had to be aged 18 years or older, to have been the main caregiver for at least six months and to sign informed consent. As regards their sociodemographic characteristics, 27.68% were the care recipient's spouse, 71.43% were married, 32.14% were practising Catholics, 44.64% were employed, 36.61% had university studies, 78.57% lived with the care recipient, 71.43% perceived restriction of their leisure time, 26.79% had difficulties at work and 8.03% reported no financial difficulties. The mean time as the main caregiver was 4.86 years ($SD = 3.80$; range 0.5–28 years). Regarding impairment and dependency in care recipients, only 6.25% showed no cognitive impairment and only 8.93% were independent for activities of daily living.

2.2 | Instruments

2.2.1 | Sociodemographic questionnaire

Participants completed a questionnaire which collected caregiver sociodemographic information about their caregiving role. Variables

included in this questionnaire were the caregiver's gender, age, marital and employment status, level of education, religion, relationship to the care recipient, whether they lived with the care recipient, time as a caregiver, perceived financial difficulties, whether they perceived a restriction of leisure time and whether they had difficulties at work. The day centres provided information about care recipients, specifically their score on the MMSE and the Barthel Index as measures of cognitive impairment and independence for activities of daily living, respectively.

2.2.2 | Life satisfaction

Life satisfaction was assessed with the Spanish version (Vázquez et al., 2013) of the *Satisfaction with Life Scale* (SWLS; Diener et al., 1985), which assesses the cognitive component of subjective well-being, reflecting a person's appraisal of his or her life. Each of the five scale items is rated on a seven-point Likert-type scale (from "strongly disagree" to "strongly agree"), and hence the total score ranges between 5 and 35. Higher scores indicate a higher level of life satisfaction. In the present sample, Cronbach's alpha coefficient was .89.

2.2.3 | Perceived stress

Perceived stress was assessed with the Spanish version (Daza et al. 2002) of the stress scale of the Depression Anxiety Stress Scales (DASS-21; Lovibond & Lovibond, 1995). Each of the seven scale items is rated on a four-point Likert-type scale (from "did not apply to me at all" to "applied to me very much or most of the time"), with respondents being asked to consider their experience during the past week. The total stress score, therefore, ranges between 0 and 21, and higher scores indicate a higher level of perceived stress. In the present sample, Cronbach's alpha coefficient was .88.

2.2.4 | Caregiver gains

Caregiver gains were measured with the Spanish version (Fabà & Villar, 2013; Ponsoda, 2015) *Gain in Alzheimer care Instrument* (GAIN; Yap et al., 2010). The GAIN comprises ten items, each rated on a five-point Likert-type scale (from "disagree a lot" to "agree a lot"), and hence the total score ranges between 0 and 40. Higher scores indicate a higher level of perceived gains from caregiving tasks. Cronbach's alpha coefficient in the present sample was .88.

2.2.5 | Character strengths

Character strengths were assessed using the Virtues in Action Inventory of Strengths (VIA-IS 72; Peterson & Park, 2009; Peterson & Seligman, 2004), in its Spanish version, which was validated and provided by the VIA Institute on Character. Here we used the short version, comprising 72 items and focussing on 24 character strengths (appreciation of beauty and excellence, creativity, bravery, fairness, curiosity, gratitude, forgiveness, hope, honesty, humour, humility, kindness, judgment, love, leadership, love of learning, perspective, perseverance, self-regulation, prudence, spirituality, social intelligence, teamwork and zest). Each character strength is assessed with three items rated on a five-point Likert-type scale (from “very much unlike me” to “very much like me”), the score being computed as the average across these items. Higher scores indicate a stronger presence of that specific character strength. Cronbach's alpha coefficient ranged from .41 to .85.

2.3 | Procedure

We contacted various day centres for people with Alzheimer's disease and other dementias in the province of Malaga and informed them about the objective of the research. Those day centres that agreed to participate then invited caregivers who were attending the centre to take part in the study, and those who accepted were given the questionnaires to complete. All participants were informed about the purpose of the research and it was made clear to them that all the information provided would remain anonymous, and also that they could withdraw from the study at any time. After signing informed consent, they completed the questionnaires in a single one-hour session. The study was approved by the Experimentation Ethics Committee of the University of Málaga, and it was carried out in accordance with the Declaration of Helsinki.

2.4 | Data analysis

All the analyses were performed using SPSS 26. We first conducted a hierarchical regression in order to identify the contextual variables, primary stressors and secondary stressors that may play a role in the prediction of life satisfaction. In the first step we introduced 10 contextual variables: gender: 1-female, 0-male; age; level of education: 1-primary, 2-secondary, 3-higher (for which we created two dummy variables, with primary studies being the reference category); marital status: 1-married, 0-other; employment status: 1-in work, 0-unemployed; religion: 1-practising catholic, 0-other; relationship to care recipient: 1-spouse, 0-other; and living with care recipient: 1-yes, 0-no; time as the main caregiver. In the second step we introduced three primary stressors: independence for activities of daily living, cognitive impairment in the care recipient and caregiver's perceived stress. Finally, in the third step, we introduced three secondary stressors: perceived financial difficulties, rated from 1 to

6; restriction of leisure time: 1-yes, 0-no; and difficulties at work: 1-yes, 0-no.

We then analysed the association between life satisfaction and character strengths, calculating Pearson correlation coefficients in order to identify the strengths with the highest correlation. Following Cohen's (1988) criteria we interpreted coefficients around $|.10|$, $|.30|$ and $|.50|$ as indicating, respectively, a small, moderate and strong correlation. The level of significance was adjusted to $p = .002$ using Bonferroni correction. The correlation between life satisfaction and perceived gains of caregiving was also computed.

Finally, having identified the contextual variables, stressors and character strengths that significantly contribute to life satisfaction, we proceeded to test a mediation model consistent with the stress process model. Statistically significant contextual variables were introduced as control variables, primary and secondary stressors as predictors, and character strengths and perceived gains of caregiving as mediators. The hypotheses underpinning the proposed mediation model were tested using multiple regression. Specifically, we used the customization option of the PROCESS macro version 3.4 for SPSS to estimate the research model and the significance of the indirect effects involved (Hayes, 2017). In the first set of models, we regressed each of the significant strengths (j) on the significant stressors (i) (each yielding an estimate of coefficient a_{ji}). Scores on gain (k) were then regressed on the strengths considered (j), controlling for stressors (yielding an estimate of coefficient b_{kj}). Finally, life satisfaction was regressed on gains, controlling for both strengths and stressors (yielding an estimate of coefficient c) (see Figure 1).

PROCESS allows researchers to test for the significance of hypothesized indirect effects by means of bootstrapping. Here we estimated the indirect effect of each stressor on life satisfaction by using the product of the coefficients involved: $a_{ji} \cdot b_{kj} \cdot c$. Similarly, all the other indirect effects in the model (e.g. the indirect effect of stressors on gains via character strengths) were obtained by multiplying the regression coefficients involved ($a_{ji} \cdot b_{kj}$). Given that the product of regression coefficients that capture the indirect effect may not follow a normal distribution, bootstrapping has been recommended from among a number of procedures because it achieves a good balance between type I error and statistical power (Hayes, 2009; MacKinnon, 2008). In this study, 10,000 samples were bootstrapped to obtain confidence intervals for these indirect effects.

For all hypotheses involved in the research model, we performed one-tailed tests as these are appropriate when directional effects are expected (e.g. Cho & Abe, 2013), particularly in mediation research (Preacher et al., 2010). Accordingly, for indirect effects, we calculated the 90% bootstrapped confidence interval.

3 | RESULTS

The model obtained after introducing contextual variables in the first stage of the hierarchical regression was not statistically significant. However, the increment in R^2 was significant after introducing

primary stressors in the second stage and secondary stressors in the third step. Overall, in the final step, lower scores on life satisfaction were linked to being a female caregiver, being unmarried, greater cognitive impairment in the care recipient, more perceived stress, restriction of leisure time and more perceived financial difficulties (Table 1).

Regarding the correlation analysis between life satisfaction and strengths, the results after Bonferroni adjustment indicated a significant positive relationship with hope, gratitude, zest, love and curiosity, each of which yielded a correlation coefficient higher than .30. Perceived gains of caregiving were also positively related to life satisfaction. Correlation coefficients are shown in Table 2.

In light of these results, in the mediation model tested to predict life satisfaction we controlled for two contextual variables (gender and marital status) and included two sets of predictors: two primary stressors (cognitive impairment and perceived stress) and two secondary stressors (restriction of leisure time and perceived financial difficulties). Regarding strengths, we included the five variables that showed significant correlations with life satisfaction: hope, gratitude, zest, love and curiosity. These variables were the first mediators in the model, which run in parallel. Finally, we included perceived gains of caregiving as an additional mediator that followed sequentially the five strengths (see Figure 2).

The results showed that only two stressors (perceived stress and restriction of leisure time) were significantly related to the strengths considered. Specifically, after controlling for gender and marital status, perceived stress was negatively related to hope, gratitude, zest, love and curiosity, whereas restriction of leisure time was negatively related only to love (Table 3). In addition, after partialling out the effects of the control variables and stressors, only one of the five strengths considered, namely hope, had a positive and significant relationship with perceived gains of caregiving (Table 4). However, contrary to our expectations, gains were not significantly related to life satisfaction (Table 4). These significant results, which are summarized in Figure 3, indicate that perceived gains of caregiving is not a variable that contributes to explaining the link between stressors and life satisfaction. In fact, none of the indirect effects via gains were significant.

It is important to note, however, that one of the predictors included in the model, namely perceived stress, did have an indirect effect on life satisfaction via hope. As mentioned above, perceived stress was negatively related to hope, and hope was positively related to life satisfaction. The corresponding indirect effect was -0.09 , with a 90% bootstrapped confidence interval ranging from -0.19 to -0.01 . Because this interval does not include zero, the indirect effect of perceived stress on life satisfaction via hope may be considered statistically significant ($p < .05$). The fact that the direct effect of perceived stress

TABLE 1 Results for hierarchical regression with life satisfaction as the dependent variable

Variables	Step 1 (SE)	Step 2 (SE)	Step 3 (SE)	F	R ²	ΔR ²
Contextual variables						
Gender (female)	−1.79 (1.16)	−1.73 (1.08)	−2.44* (1.01)	1.16	.10	
Age	0.06 (0.06)	0.01 (0.06)	−0.04 (0.06)			
Level of education (secondary)	−1.76 (1.33)	−1.00 (1.25)	−0.30 (1.14)			
Level of education (higher)	−0.06 (1.16)	0.72 (1.11)	−0.58 (1.04)			
Marital status (married)	1.55 (1.08)	1.61 (1.01)	1.91* (0.91)			
Employment status (in work)	0.58 (1.14)	1.61 (1.06)	0.11 (0.96)			
Religion (practising Catholic)	0.17 (1.07)	−0.06 (0.99)	−0.30 (0.93)			
Relationship to care recipient (spouse)	−3.24 (1.83)	−2.09 (1.72)	−2.09 (1.61)			
Living with care recipient (yes)	−1.09 (1.19)	−1.18 (1.10)	−0.69 (1.05)			
Time as caregiver	−0.12 (0.13)	−0.04 (0.12)	0.03 (0.11)			
Primary stressors						
Independence for activities of daily living		−0.22 (0.48)	−0.69 (0.44)	2.54**	.25**	.15**
Cognitive impairment		1.30* (0.58)	1.48** (0.55)			
Perceived stress		−0.35** (0.09)	−0.25** (0.09)			
Secondary stressors						
Perceived financial difficulties			−1.14** (0.34)	4.22**	.42**	.17**
Restriction of leisure time (yes)			−2.61** (1.00)			
Difficulties at work (yes)			−1.83 (1.02)			

** $p < .01$; * $p < .05$; p -values for regression coefficients are one-tailed tests; regression coefficients are unstandardized. Reference categories are shown in parentheses.

on life satisfaction was not significant ($B = -0.14$; $p > .05$) indicates that perceived stress is only negatively related to life satisfaction when hope (and specifically a lack of hope) intervenes. Note too that the indirect effect of perceived stress on gain via hope was also statistically

TABLE 2 Correlation coefficients between life satisfaction and character strengths, and with perceived gains of caregiving

Strengths	Life satisfaction
Hope	.42**
Gratitude	.33**
Zest	.33**
Love	.33**
Curiosity	.32**
Forgiveness	.23
Creativity	.22
Judgement	.21
Humility	.21
Appreciation of beauty	.19
Teamwork	.18
Self-regulation	.17
Fairness	.17
Social intelligence	.17
Bravery	.16
Leadership	.16
Honesty	.13
Spirituality	.12
Kindness	.11
Perspective	.11
Humour	.10
Perseverance	.09
Love of learning	.08
Prudence	.05
Perceived gains of caregiving	.29**

* $p < .05$; ** $p < .002$ (Bonferroni adjustment).

significant. The indirect effect or product of the coefficients involved was -0.14 , with a 90% bootstrapped confidence interval ranging from -0.26 to -0.03 , which again is statistically significant ($p < .05$).

Regarding the other stressors considered, cognitive impairment, perceived financial difficulties and restriction of leisure time had, as we expected, a statistically significant direct effect on life satisfaction. However, contrary to expectations, none of the proposed mediators contributed to explaining their relationship with life satisfaction.

A post hoc power analysis for each regression equation was run for a sample of $N = 112$ and $\alpha = .05$. For the first regression model (regressing contextual variables and stressors on life satisfaction), there were 16 predictors and an effect (R^2) of .42. The statistical power reached was .99. Regarding the equations involved in the mediation analysis: (1) for the first mediating paths (stressors \rightarrow strengths), controlling for contextual variables, there were six predictors and an average effect of .11; (2) for the second mediating paths (strengths \rightarrow gains), controlling for contextual variables and stressors, there were 11 predictors and an average effect of .38; and (3) for the third mediating paths (gains \rightarrow life satisfaction), and after controlling for contextual variables, stressors and strengths, there were 12 predictors and an effect of .41. The statistical power reached for these three equations was .78, .99 and .99, respectively. If we focus on individual regression coefficients included in the equations (between 6 and 16), Green's (1991) rule of thumb for a medium sample size suggests required sample sizes between 110 and 120. Finally, for the indirect effects, results showed that when the regression coefficients involved in the mediation were significant, all the indirect effects were also significant. Power analysis for these indirect effects (see Schoemann et al., 2017) resulted in power levels of .95 (for perceived stress \rightarrow hope \rightarrow life satisfaction) and .94 (for perceived stress \rightarrow hope \rightarrow gain). Together these results suggest that the sample size for all the equations is acceptable.

4 | DISCUSSION

The present study aimed to explore the role of character strengths and perceived gains of caregiving as potential mediators in the

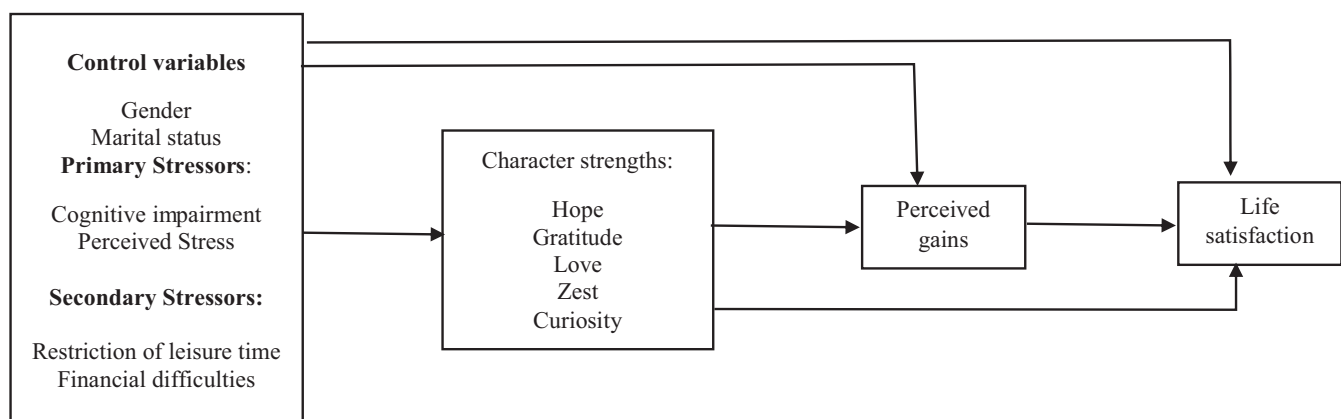


FIGURE 2 Mediation model tested

TABLE 3 Regression equations: strengths on stressors

Variables	Hope	Gratitude	Love	Zest	Curiosity
	B (SE)	B (SE)	B (SE)	B (SE)	B (SE)
Gender (female)	0.11 (0.16)	0.05 (0.13)	0.12 (0.16)	0.05 (0.16)	-0.06 (0.18)
Marital status (married)	0.18 (0.15)	0.23* (0.12)	0.14 (0.14)	0.18 (0.15)	0.09 (0.16)
Cognitive impairment	-0.01 (0.08)	0.07 (0.24)	0.01 (0.08)	0.03 (0.08)	0.03 (0.09)
Perceived stress	-0.05** (0.01)	-0.02* (0.01)	-0.02* (0.01)	-0.04** (0.01)	-0.03* (0.01)
Restriction of leisure time	-0.16 (0.16)	-0.08 (0.12)	-0.33* (0.15)	-0.20 (0.16)	-0.27 (0.17)
Perceived financial difficulties	0.01 (0.05)	-0.06 (0.04)	-0.00 (0.05)	0.01 (0.05)	0.01 (0.06)
	$R^2 = .13^*$	$R^2 = .11^*$	$R^2 = .10$ ($p = .06$)	$R^2 = .12^*$	$R^2 = .09$ ($p = .12$)

** $p < .01$; * $p < .05$; p -values for regression coefficients are one-tailed tests; regression coefficients are unstandardized. Reference categories are shown in parentheses.

TABLE 4 Regression equations: Gains on stressors and strengths, and life satisfaction on stressors, strengths and gains

Variables	Perceived gains of caregiving	Life satisfaction
	B (SE)	B (SE)
Gender (female)	-1.74 (1.41)	-2.23** (0.94)
Marital status (married)	1.53 (1.29)	0.63 (0.86)
Cognitive impairment	0.24 (0.70)	0.91* (0.46)
Perceived stress	-0.35** (0.13)	-0.14 (0.09)
Restriction of leisure time	1.30 (1.39)	-2.08* (0.93)
Perceived financial difficulties	0.33 (0.45)	-1.03** (0.30)
Hope	2.82** (1.19)	1.96** (0.82)
Gratitude	2.19 (1.48)	-0.11 (0.99)
Love	1.02 (1.13)	0.55 (0.75)
Zest	0.21 (1.19)	-0.12 (0.79)
Curiosity	0.08 (1.00)	0.11 (0.66)
Perceived gains		0.02 (0.07)
	$R^2 = .38^{**}$	$R^2 = .41^{**}$

** $p < .01$; * $p < .05$; p -values for regression coefficients are one-tailed tests; regression coefficients are unstandardized. Reference categories are shown in parentheses.

association between informal caregivers' life satisfaction and both primary stressors (independence for activities of daily living and cognitive impairment in the care recipient, and caregiver's perceived stress) and secondary stressors (perceived financial difficulties, restriction of leisure time and difficulties at work), controlling for contextual variables.

We began by conducting a hierarchical regression to identify the contextual variables, as well as the primary and secondary stressors which were statistically significant in the prediction of life satisfaction. Regarding contextual variables, the results obtained in the final stage of the hierarchical regression showed that female

and unmarried caregivers scored lower on life satisfaction. Other researchers have reported similar findings and have suggested that women's depressive state, subjective health, and life satisfaction are more affected by informal caregiving because they generally spend more time in this role than do men (Wakabayashi & Kureishi, 2018). There is also empirical evidence that caregiving may have a negative impact on the subjective well-being of unmarried caregivers, who may receive less support and thus are more sensitive to stressors from caregiving (Niimi, 2016). Regarding primary and secondary stressors, our results were consistent with what we expected, insofar as a lower level of life satisfaction was related to a higher cognitive impairment in the care recipient, and to more perceived stress, more perceived economic difficulties and restriction of leisure time in caregivers. These findings highlight that the greater the challenges faced by caregivers the poorer their appraisal of life as a whole. These stressors should therefore be assessed and targeted as part of interventions in care services aimed at supporting caregivers so as to build their coping resources.

In the next stage of our study, we conducted a simple correlation analysis with Bonferroni adjustment to identify the strengths most strongly associated with life satisfaction. Our results showed that hope, gratitude, zest, love and curiosity were all positively related to life satisfaction and that the strongest correlation was with hope. This is in line with what we expected and provides further evidence about the importance of these five strengths, which have been consistently associated with life satisfaction in different studies (without caregiver participants) across the lifespan and across cultures (Blanca et al., 2018; Lee et al., 2015; Ovejero et al., 2016; Park & Peterson, 2006a, 2006b; Proyer et al., 2011). Finally, the correlation analysis also showed a positive relationship between perceived gains of caregiving and life satisfaction. This is in line with previous studies which found that lower life satisfaction in caregivers was associated with fewer perceived benefits and gains from their role (Fabà et al., 2017; Fauziana et al., 2018; Haley et al., 2003).

Having identified the significant contextual variables and stressors, we then tested a mediation model in order to identify the

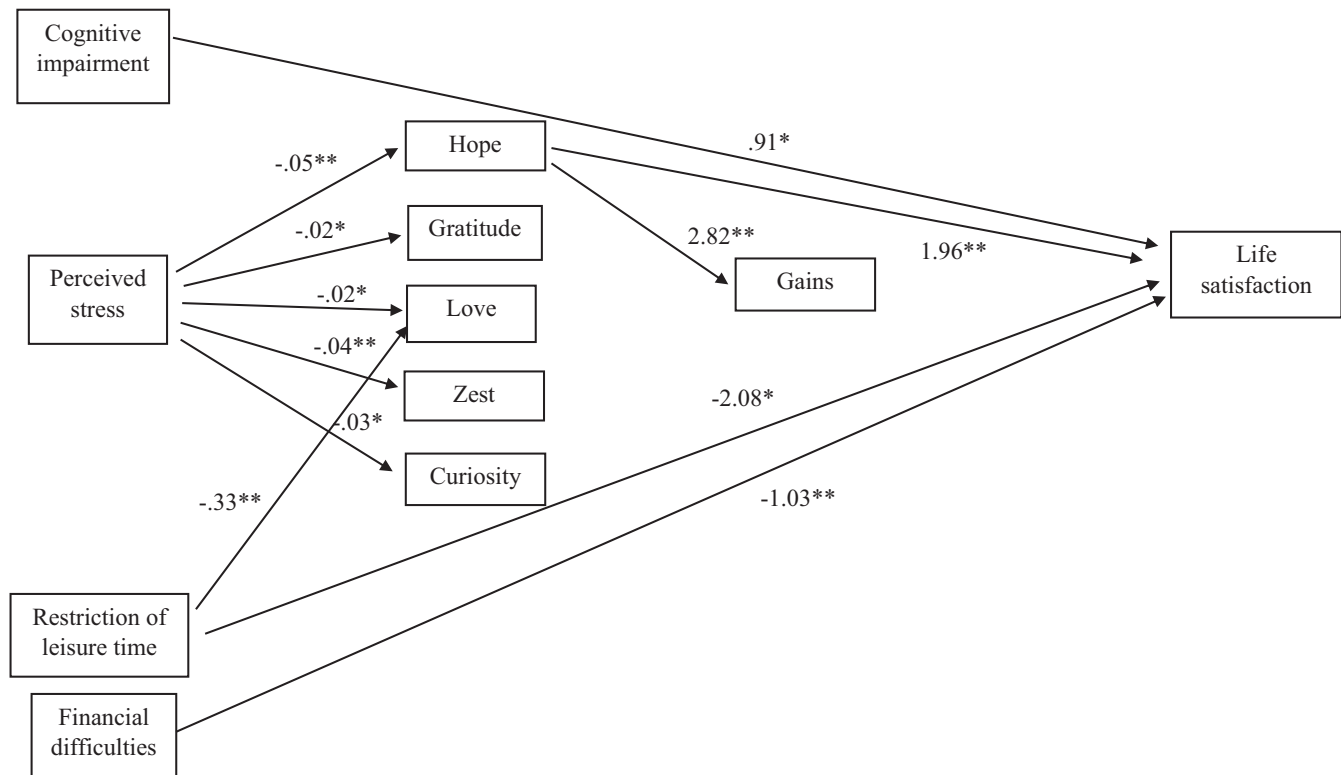


FIGURE 3 Summary of significant paths in the research model

mechanism through which stressors may influence life satisfaction. Gender and marital status were introduced as control variables; perceived stress, cognitive impairment, restriction of leisure time and perceived financial difficulties were considered as stressors; and hope, gratitude, zest, love, curiosity and perceived gains of caregiving were introduced as mediators. Some of the relationships found in the correlational analysis were modified when strengths were introduced into the model, due to the overlap between them. The model verified the direct effect of cognitive impairment, restriction of leisure time and perceived financial difficulties on life satisfaction, but there were no indirect effects for these variables through character strengths or perceived gains. Perceived stress, however, had a significant indirect effect on life satisfaction via hope. None of the other strengths mediated the associations between life satisfaction and stressors. These results suggest that each stressor plays a different role in the prediction of life satisfaction and that there are different pathways through which they affect caregivers' appraisal of their lives. Future research is warranted in order to test other possible mediators such as coping styles or social support.

The mediating role of hope between perceived stress and life satisfaction indicates, as we expected, that higher levels of perceived stress are related to decreased hope, suggesting that this lack of hope maybe one of the pathways through which stress can lead to low life satisfaction. Another interesting result from the mediation model is the significant indirect effect of perceived stress on perceived gains through hope. This finding indicates that a lack of hope is one pathway through which stress may cause not only low life satisfaction but also low perceived gains from caregiving. Perceived

gains did not, however, mediate the relationship between stressors and life satisfaction. This suggests that perceived gain is an outcome variable in the stress process model and that it may be explained by stressors and mediating variables.

The relevance of hope in the caregiving context has been highlighted previously. More specifically, it has recently been reported that hope mediates the association between perceived stress and burden and that hope is the strength most strongly associated with perceived gains (García-Castro et al., 2019, 2020). Hope is conceived as an action-oriented strength and is defined as a positive expectation about the future, such that a person acts in ways that are believed to make desired events more likely (Park et al., 2004; Peterson & Seligman, 2004). Our results here show that a lack of this positive expectation can lead to decreased subjective well-being in caregivers. Overall, this finding provides further support for the positive relationship found across the lifespan in the general population between hope and happiness, life purpose, life satisfaction and well-being (Blanca et al., 2018; Ciarrochi et al., 2015; O'Sullivan, 2011; Ovejero et al., 2016; Proyer et al., 2011). According to hope theory (Snyder, 2000; Snyder et al., 2000), hope has two components: pathway thoughts, referring to the perceived ability to generate possible routes to achieving goals, and agency thoughts, reflecting the motivation to achieve these goals. It is possible that caregivers who experience a lack of hope are less able to generate these two components. Recently, Wang et al. (2020) studied the neurostructural correlates of hope and found that a greater grey matter volume in the left supplementary motor area was robustly linked to higher hope, and, in turn, that

hope mediated the relationship between the greater grey matter volume and subjective well-being. These findings shed light on the neuroanatomical basis of hope.

Our mediation model also revealed a number of other relevant results regarding the role of character strengths. First, perceived stress was negatively and significantly related to the five character strengths included in the model (hope, gratitude, zest, love and curiosity), suggesting that caregivers who endorse these character strengths may be able to deal more effectively with care-related stressors. This finding is expected since the endorsement of strengths as a whole is negatively related to perceived stress (Duan, 2016; Li et al., 2017). Second, there was a negative and significant association between restriction of leisure time and love. Love has been defined as valuing close relationships with others, particularly those in which sharing and caring are reciprocated (Park et al., 2004), and it is considered one of the character strengths most influenced by environmental factors (Steger et al., 2007). Accordingly, our finding could indicate that caregivers who ascribe greater value to their relationships with others may make more effort to set aside time for these relationships as part of their leisure activities.

Although our study provides some important results, there are several limitations that should be considered. First, participants were recruited through day centres for people with Alzheimer's and other dementias, which may restrict the generalizability of the results. Second, the data were obtained using self-report questionnaires. Finally, the use of a cross-sectional design means that longitudinal studies are needed to provide more information about causal associations. Despite these limitations, the study makes an important contribution in that it tests an overall model which includes the relationship between stressors, character strengths and perceived gains of caregiving as mediating variables and life satisfaction as a health outcome, doing so in accordance with the stress process model. As far as we know, this mediating model has not previously been considered. Overall, the findings show that lower life satisfaction in informal caregivers is associated with being female and unmarried, as well as with both primary and secondary stressors, namely greater cognitive impairment in the care recipient and a higher level of perceived stress, restriction of leisure time and perceived financial difficulties. This highlights that the greater the challenges faced by caregivers the poorer their appraisal of life as a whole. We also found that caregivers with lower levels of hope, gratitude, zest, love and curiosity tend to score lower on life satisfaction. However, when these strengths were introduced into the mediation model, hope was the only one that remained significant, mediating the relationship between perceived stress and life satisfaction, as well as that between perceived stress and perceived gains of caregiving. Our results, therefore, identify the mechanism through which stressors may influence life satisfaction and the experience of caregiving, with the lack of hope being one of the pathways through which stress may lead to low life satisfaction and low perceived gains from caregiving.

Overall, the findings of this study have both theoretical and clinical implications. On the one hand, they provide partial support

for the stress process model, identifying hope as a key character strength. In addition, they suggest that interventions in care services aimed at building hope might increase both life satisfaction and the perceived benefits of the caring role among caregivers. Helping caregivers to devise goals and to develop routes for reaching them, while boosting their motivation and confidence in relation to achieving them, could enhance their coping resources, thus consolidating their sense of hope and leading to improved psychological well-being. These results are relevant to gerontological nursing based on the Senses Framework and relationship-centred care (Nolan et al., 2006), insofar as they highlight the importance of the senses of purpose (i.e. having personally valuable goals to aspire to) and achievement (i.e. making progress towards these goals) (Nolan et al., 2006; Ryan et al., 2008; Watson, 2019). Nursing and care staff can play an active role in helping informal caregivers to meet their goals by promoting these two senses, thereby fostering a more positive caregiving experience.

5 | RELEVANCE STATEMENT

This paper provides evidence of the impact on the well-being of caring for a person with dementia, as well as the psychological resources that mediate the relationship between well-being and stressors. Although perceived gains of caregiving and character strengths have been proposed as mediating variables, their precise contribution remains unknown. We identified hope as a key character strength, highlighting its mediating role in the relationship between perceived stress and life satisfaction and perceived benefits of caregiving. By promoting a sense of purpose and achievement among informal caregivers, nursing and care staff could help to foster a more positive caring experience.

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CONFLICT OF INTERESTS

No potential conflict of interest was reported by the authors.

DATA AVAILABILITY STATEMENT

The data that support the findings of this study are openly available in RIUMA at <https://hdl.handle.net/10630/19653>.

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