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Analysis of grandparents' activities with grandchildren in the post COVID-19 lockdown period and the relationship with satisfaction, resilience and SPS

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Abstract

Background: COVID-19 is a new variable to understand family dynamics, including grandparent-grandchildren relationships. The aim was to know the frequency and satisfaction of grandparents who share activities with grandchildren in the period following the pandemic lockdown, to compare these results retrospectively with those reported from before the pandemic, and to examine the relationship with resilience and sensory processing sensitivity (SPS) to know their levels of strength vs. vulnerability. *Method:* 79 grandparents ($M = 71.13$, $SD = 8.00$; 65.8% grandmothers) were interviewed cross-sectionally about: a) sociodemographic data, b) frequency and satisfaction in shared activities, c) resilience (CD-RISC), and d) highly sensitive person scale (HSPS). Descriptive statistics and inferential tests were used. *Results:* The leisure activities decreased mostly (33%) and general satisfaction was medium-high, according to activities, age, health and close/distant habitat of the grandparents. Resilience was high (76.4%) and related to greater satisfaction and medium-high educational level. The SPS was mostly moderate (62%), and related to greater satisfaction in cultural transmission activities and when they live far from their grandchildren. *Conclusions:* Shared activities do not seem to have decreased, after the pandemic lockdown, and satisfaction is positive, while resilience and SPS show more strength than vulnerability. More research is needed on these grandparents' variables.

Keywords

Intergenerational relationships, grandparents' satisfaction, resilience, highly sensitive person (HSP), COVID-19.

Anàlisi de les activitats dels avis i àvies amb els nets i netes després del confinament per la COVID-12 i la relació que tenen amb satisfacció, resiliència i SPS

Resum

Antecedents: la COVID-19 és una variable nova que pot ajudar a entendre les dinàmiques familiars canviants i, doncs, les relacions avis/àvies – nets/netes. L'objectiu d'aquest estudi és conèixer la freqüència i satisfacció dels avis que comparteixen activitats amb els nets després del confinament, i fer la comparació retrospectiva pre-pandèmia, així com la relació amb la resiliència i sensibilitat de processament sensorial (SPS) per veure els nivells de força vs vulnerabilitat. *Mètode:* es van entrevistar transversalment 79 avis/àvies ($M = 71,13$; $DT = 8,00$, 65.8% àvies) sobre (a) dades sociodemogràfiques, (b) freqüència i satisfacció en activitats compartides, (c) resiliència (CD-RISC) i (d) escala d'alta sensibilitat (HSPs). Es van aplicar anàlisis estadístiques descriptives i proves inferencials. *Resultats:* la majoria de les activitats lúdiques van minvar (33%), la satisfacció general va ser mitjana-alta, depenent de les activitats, edat, salut i hàbitat proper/allunyat dels avis. La resiliència va resultar alta (76,4%) i relacionada con més satisfacció i nivell educatiu mitjà-alt. La SPS va resultar moderada (62%), i relacionada con més satisfacció en activitats de transmissió cultural i amb el fet que els nets viuen lluny dels avis. *Conclusions:* les activitats compartides no sembla que hagin minvat després del confinament y la satisfacció és positiva, mentre que la resiliència i SPS mostren més força que vulnerabilitat. Cal investigar més aquestes variables dels avis.

Paraules clau

Relacions intergeneracionals; satisfacció d'avis/àvies; resiliència; persona altament sensible (PAS); COVID-19.

Análisis de las actividades de abuelos/as con nietos/as tras el confinamiento por COVID-19 y su relación con satisfacción, resiliencia y SPS

Resumen

Antecedentes: la COVID-19 es una variable nueva que puede ayudar a entender las dinámicas familiares cambiantes y por tanto las relaciones abuelos/as-nietos/as. El objetivo de este estudio fue conocer la frecuencia y satisfacción de abuelos/as que comparten actividades con nietos/as tras el confinamiento, y su comparación retrospectiva pre-pandemia, así como la relación con su resiliencia y sensibilidad de procesamiento sensorial (SPS) para conocer sus niveles de fuerza vs vulnerabilidad. *Método:* se entrevistó transversalmente a 79 abuelos/as ($M = 71,13$; $DT = 8,00$, 65.8% abuelas) sobre (a) datos sociodemográficos, (b) frecuencia y satisfacción en actividades compartidas, (c) resiliencia (CD-RISC) y (d) escala de alta sensibilidad (HSPs). Se aplicaron análisis estadísticos descriptivos y pruebas inferenciales. *Resultados:* las actividades lúdicas disminuyeron mayoritariamente (33%), su satisfacción general fue media-alta, según actividades, edad, salud y hábitat cercano/lejano de los abuelos/as. La resiliencia resultó alta (76,4%) y relacionada con mayor satisfacción y nivel educativo medio-alto. La SPS resultó moderada (62%), y relacionada con mayor satisfacción en actividades de transmisión cultural y cuando viven lejos de sus nietos/as. *Conclusiones:* las actividades compartidas no parecen haber disminuido después del confinamiento y su satisfacción es positiva, mientras su resiliencia y SPS muestran más fuerza que vulnerabilidad. Se necesita investigar más estas variables de los abuelos/as.

Palabras clave

Relaciones intergeneracionales; satisfacción de abuelos/as; resiliencia; persona altamente sensible (PAS); COVID-19.

INTRODUCTION

The COVID-19 pandemic is directly affecting relationships between family members (Eales et al., 2021). Older people are amongst the most vulnerable populations epidemiologically (He & Wang, 2021; Nikolich-Zugich et al., 2020). Given their important role in the raising of their grandchildren (Hamman, 2021; Pinazo-Hernandis, 2020), it is worth examining how the pandemic is influencing these intergenerational relationships and how grandparents as individuals are managing the situation. Thus, in the present study we wanted to ask grandparents the frequency of their shared activities and their associated satisfaction, a year after the lockdown period, and ask them to compare this retrospectively to the pre-pandemic frequency, and also to examine their levels of resilience and sensory processing sensitivity (SPS). These two variables are relevant to evaluate their strength (in cases of medium or high resilience and low or medium SPS) and their vulnerability (in cases of low resilience and high

SPS) (Fuller & Huseth-Zosel, 2021; Homberg & Jagiellowicz, 2021).

Given the certain novelty with that last variable or trait about human sensibility we can distinguish three acronyms throughout this work (Aron & Aron, 1997): sensory processing sensitivity (SPS), highly sensitive person scale (HSPS), and highly sensitive person (HSP).

The study of older people and the grandparenting role under the COVID-19 pandemic is being unbalanced with more focused research on vulnerability variables (Sneed & Krendl, 2022) than on those of strength, like resilience (Igarashi et al., 2022; Zhang et al., 2022).

The importance of fostering good relationships between grandparents and grandchildren, not just for the benefits they bring the younger generation but also for the numerous positive effects they have on the grandparents themselves and on the family unit (García Díaz et al., 2020; He & Wang, 2021).

The first focus of the present study, satisfaction with the grandparenting role through shared activities, is important not only because it strengthens family relationships but also because it helps grandparents feel good and useful (Warburton et al., 2006).

Fulfilling the grandparenting role (see Castañeda-García et al., 2017; Rico et al., 2001; Roa Venegas & Vacas Díaz, 2001) can positively influence self-esteem and self-confidence. Indeed, for some middle-aged and older individuals, it can be a fundamental component of their identity. Ben Shlomo (2014) has shown that the greater their life satisfaction, the lower the anxiety in grandparents; furthermore, those who feel satisfaction with this role are less likely to suffer depression. Condon et al. (2020) claim that this greater satisfaction is due to attachment, and this is associated with sharing activities together. In the study of Xu and Chi (2011), grandparents were more likely to report high levels of life satisfaction if they received more support from grandchildren.

In an older population, social isolation leads to negative functional, cognitive, and immunological consequences. In the same vein, older people's frailty affects their intrinsic capacities and resilience (Pinazo-Hernandis, 2020). One of the key problems thrown up by the pandemic for the older generation has been the drastic change in their interpersonal relationships, and that is one of the reasons for exploring here the frequency of shared activities between grandparents and grandchildren a year after the COVID-19 lockdown.

The second aspect studied here related to strength vs. vulnerability is resilience, given its key role in an individual's ability to deal with different types of stress and maintain a balanced life (Vinkers et al., 2020), and because it is a strength that has positive effects on well-being (Pérez-Rojo et al., 2021).

Resilience may be one factor that influences grandparents' experiences in near-parental roles. Grandparents in greater near-parental roles with moderate and high levels of resilience enacted more relational maintenance behaviors compared to those with low resilience (McNallie & Gettings, 2021).

Before the COVID-19 pandemic, researchers also found evidence that supportive relationships between children and grandparents would serve as important external protectors of resilience for both generations, hence strengthening their ability to bounce back from stress (Zhou et al., 2020).

This pattern suggests resilience is important in the overall health of grandparent-grandchildren relationships, as it preserves the satisfying nature of the relationship when the "traditional" relationship dynamic changes by circumstances, for example, the actual prolonged pandemic.

In current studies examining the effects of COVID-19 on health in the general population (Palomera et al., 2022), older people have been under-studied or under-represented, with a few exceptions (Castañeda-García et al.,

2022; Fuller & Huseth-Zosel, 2021). Thus, in international studies of different mental health aspects under COVID-19, we see that the mean age of participants was 26.4 (Çelik et al., 2022), 29 (Çetin & Kökalan, 2021) or 35.4 (Fountoulakis et al., 2022). In studies of resilience, such as that by Rossi et al. (2021), only 3.5% of the sample was over 60 years of age.

Moreover, many studies of the effects of COVID-19 on older people focus on negative psychosocial characteristics (Aslan & Kant, 2022; Rodríguez et al., 2022); however, there are some positive characteristics or strengths that can help older people deal with this new situation (Castañeda-García et al., 2022; Vinkers et al., 2020). Here, we see that the characteristics of resilience work in their favor, and increasingly so as one grows older. It would therefore seem necessary to conduct more analyses of older people in general and specifically, as in the present case, grandparents.

The third key aspect included in the present study and related to strength vs. vulnerability in older people under the prolonged pandemic, is that of sensory processing sensitivity (SPS). This population has seldom been evaluated using SPS questionnaires (Aron & Aron, 1997) and the concept is rarely dealt with in studies of intergenerational relationships between grandparents and grandchildren.

When it comes to sensitivity and response capacity, we find there are significant differences between individuals. Based on these differences, Aron & Aron (1997) introduced the concept of sensory processing sensitivity (SPS), and related it to temperament and personality. A highly sensitive person (hereinafter HSP) is characterized by over-activation and ease of perception of internal and external stimuli, and by deep processing of information and strong emotional activation. A population of HSPs will give responses with more intensive effects to both negative and positive aspects (Greven et al., 2019).

The phenomenon of HSP is ascribed a biological basis (Greven et al., 2019), as a genetic trait that is unrelated to any alteration to the sense organs (Acevedo et al., 2014; Jagiellowicz et al., 2016; Montoya-Pérez et al., 2019). High sensitivity affects the HSP's health, but also their education and work circumstances, as it affects an individual's well-being, quality of life and functional difficulties (Aron et al., 2012).

HSPs are more vulnerable and suggestible; they also find it harder to make decisions, as they have to consider and analyze new situations before taking action (Aron et al., 2012; Homberg et al., 2016). They also tend to be easily overwhelmed in stimulating situations (Aron et al., 2012).

Few studies have examined whether age can influence sensory sensitivity, and in some that have, it has been found that SPS decreases with age (Ueno et al., 2019; Humes et al., 2013). In the same vein, Pohl et al. (2003) found, in a study that divided participants into three age groups, that the group of participants over 65 showed less sensory processing sensitivity (less HSP) than the younger participants.

As far as we know, there are no studies of SPS/HSP and COVID-19 in the older ages (Cadogan et al., 2022). Only in young adult HSPs showing greater anxiety about health (Güneş & Bulut, 2022) and more vulnerability but protected through resilience (Iimura, 2022). And also in middle-aged adults in which the results coincide by indicating a greater vulnerability in HSPs, by showing burnout and compassion fatigue in healthcare and education professionals (Pérez-Chacón et al., 2021), and greater risk of emotional deterioration like feeling lonely, threatened, afraid, anxious, etc. (Malinakova et al., 2021).

Given this lack of samples including middle-aged and especially older populations, the present study has a general aim to examine and get a profile of two aspects in a group of grandparents a year after the pandemic lockdown (March-May 2021): the intergenerational family interactions, and their strength and vulnerability through resilience and SPS. This will be done by means of three specific aims: 1) to analyze the frequency of grandparents who share activities with grandchildren in the post-pandemic lockdown period, and compare these results retrospectively with those reported from before the pandemic, and measure the actual satisfaction these produce in the grandparents; 2) to determine grandparents' degree of resilience; and 3) to determine grandparents' degree of sensory processing sensitivity (SPS), and establish possible relationships between these variables, and between the variables and the sociodemographic data.

METHOD

Participants

The sample consisted of 79 participants with grandchildren, aged from 57 to 89 ($M_{age} = 71.13$, $SD = 8.00$); 65.8% female ($n = 52$) and 34.2% male ($n = 27$). The number of granddaughters ranged from 1 to 6, and of grandsons from 1 to 7, with one grandchild being the most common number (35.4% had one granddaughter and 34.2% one grandson, and the rest with both), and with the grandchild's age ranging from 2 to 18. For all other sociodemographic data see [Table 1](#).

Instruments

An interview was conducted using four questionnaires to collect all information:

1. *Sociodemographic questionnaire*. As seen above, data were collected on the participants' age, sex, marital status, educational level, employment status, health status, proximity of residence to grandchildren, and line of kinship to their grandchildren.
2. *Questionnaire on intergenerational activities* (Castañeda-García et al., 2021).

Table 1: Sociodemographic data of the participant sample.

		%
Marital status	Married	72.2%
	Widowed	17.7%
	Separated – Divorced	7.6%
	Common law	2.5%
Educational level	No schooling	15.2%
	Primary	45.6%
	Secondary / college prep.	31.6%
	Post-secondary	3.8%
	Other	3.8%
Employment status	Retired	67.1%
	Homemaker	15.2%
	Unemployed	8.9%
	Employed	8.9%
Health status	Good	46.8%
	Average	49.4%
	Poor	3.0%
Currently ill or taking medication	Yes	48.1%
	No	51.9%
Proximity of residence to grandchildren	Same house or building	17.7%
	Same street	31.6%
	Same island	41.8%
Relation to grandchild	Through a son	40.5%
	Through a daughter	59.5%

This questionnaire has 16 items, referring to different daily activities performed by grandparents with their grandchildren, with high internal consistency (Cronbach's alpha 0.86).

A final question was added concerning the number of days per week and hours per day spent on these shared activities. The 16 activities were divided into five categories by theme: *Play*, *Cultural transmission*, *Household activities*, *Help with schoolwork*, and *Family celebrations* (see [Table 2](#)). For each of these 16 items, two questions were asked: a) If the shared activity is performed *less often*, *the same*, or *more often* than before the pandemic; a Likert-type scale (1 = *less often*, 2 = *the same*, 3 = *more often*) was used; and b) How the grandparent feels about this activity; here too, a Likert-type scale was used (1 = *very dissatisfied*, 2 = *dissatisfied*, 3 = *satisfied*, and 4 = *very satisfied*).

3. *Resilience Scale* (CD-RISC; Connor & Davidson, 2003; Serrano-Parra et al., 2012).

The original scale comprises 25 items grouped into five dimensions, with a good internal consistency (Cronbach's alpha 0.89). The version used here has been validated in Spanish by Serrano-Parra et al. (2012), consisting of 17 items divided into three dimensions:

Tenacity and self-efficacy, *Parental control* and *Social competence*. Here, internal consistency resulted high (Cronbach's alpha of 0.79) for both the dimensions *Tenacity and self-efficacy* and *Parental control*, and low internal consistency (0.56) for *Social competence*. Responses proposed by the authors are on a Likert scale with five options scoring from 1 to 5: *never, rarely, sometimes, often, and nearly all the time*. The scale with three categories for the final score (which can be from 17 to 85), with the following lower and upper limits: low (17 to 39), medium (40 to 62), and high (63 to 85) resilience.

4. *Highly Sensitivity Person Scale (HSPS; Aron & Aron, 1997)*.

This scale is a questionnaire with appropriate psychometric properties for measuring sensory processing sensitivity (SPS) with high internal consistency (Cronbach's alpha 0.86). It has 27 items, with seven options scoring from *I do not agree at all* (1), to *I completely agree* (7). In the present study, we used a translation into Spanish of the original Highly Sensitivity Person Scale (HSPS) questionnaire by Aron & Aron (1997), which is consistent both with the Spanish-language translations used in other studies (Aron, 2006) and with the recent adaptation to the Spanish population published after our data had been collected (Chacón et al, 2021). It is also a summative scale, so the higher the score, the greater the sensory processing sensitivity, with three categories for the final score (which can be from 27 to 189), with the following lower and upper limits: low (27 to 81), medium (82 to 135), and high (136 to 189) sensitivity.

Procedure

To recruit the participant sample, we asked psychology students to help us locate grandparents who would be available to participate, with no physical mobility or cognitive problems, and with grandchildren aged 2 to 18. Those selected who explicitly agreed to participate voluntarily in the study were informed by their grandchildren of the aim of the interview and of the anonymous and confidential nature of the data collected. All of them were in their homes. The interview questionnaires were administered by telephone by their grandchildren over one or more sessions in line with participant preference. Of the 86 interviews conducted, seven were discarded as they did not meet one or more requirements: having answered about grandchildren under two years of age and/or over 18.

Data analysis

After the data were gathered and codified, the analyses were run using the statistical package IBM SPSS (version 25). The normality of the data was checked using the Kolmogorov-Smirnov test, with a p -value under 0.05 in all variables except the overall SPS score and the control subscale

for resilience. We therefore assumed that all quantitative variables, except SPS and control, do not fit the normal curve, and so used non-parametric tests: Spearman's correlation to study the relationship between variables, the Mann Whitney U, Wilcoxon, and Kruskal-Wallis tests for comparison of groups, and Friedman for comparison of variables. For the crossing of qualitative variables, the Chi-squared test was performed.

RESULTS

Determining whether the frequency of shared activities between grandparents and grandchildren had changed a year after the pandemic, in retrospective comparison to before the pandemic, establishing the actual degree of satisfaction with these activities, and observing possible relationships with sociodemographic variables.

Changes to the frequency of activities. Although the findings did not meet the threshold for significance, the mean frequencies reported for shared activities were different, especially for the activities in the *Play* category, which were performed 33% less frequently after than before the pandemic, in particular "Going for a walk", which approximately 40% of participants reported doing less frequently a year after the post-COVID-19 lockdown. For the remaining categories, 54 to 78% of grandparents reported the same frequency as before the pandemic. See [Table 2](#).

Overall satisfaction. An overall satisfaction index was calculated for all shared activities. It was found to fall between 21 and 64 points, of a maximum range of 0 to 100 ($M = 50.49$, $SD = 7.44$). Almost two thirds of grandparents (63.3%) stated that they were satisfied with the activities shared with their grandchildren.

Satisfaction by type of activity. Significant differences were found in grandparents' mean satisfaction with the five types of activity ($F(4) = 119.334$; $p = .000$; $V = 17.78$). We found that the greatest satisfaction was expressed for *Help with schoolwork*, followed by *Household act.*, *Cultural transmission*, *Play*, and the least satisfying was with *Family celebrations*. See [Table 3](#).

Satisfaction by grandparent's age. Younger participants expressed greater satisfaction ($H = 6.648$; $p = .036$; $E^2 = .09$). Furthermore, a negative, significant correlation between the two factors was found ($r(76) = -.233$; $p = .039$), that is, with greater age comes lower satisfaction.

Satisfaction by health status. Grandparents with average to poor health showed less satisfaction with the activities in the category *Cultural transmission* ($U = 475,000$; $p = .007$; $PS_{est} = .31$). Also, we observed that the group with average to poor health participated in all categories of activity less frequently ($M = 1.29$, $SD = .31$) than those in good health ($M = 1.47$, $SD = .31$).

Satisfaction by proximity of residence to grandchildren. Grandparents who live further from their grandchildren reported greater satisfaction with the activities in the cate-

Table 2: Comparative mean frequency of shared activities between grandparents and grandchildren in the period following the pandemic lockdown and pre-pandemic retrospective comparison.

	%		
	Less often	Same	More often
Play	33	54	13
Playing outside	32.9	57.0	10.1
Playing board games	13.9	63.3	22.8
Going for a walk	53.2	40.5	6.3
Cultural transmission	18	69	13
Teaching childhood songs	13.9	82.3	3.8
Telling children's stories	17.7	69.6	12.7
Recounting stories from the past	21.5	57.0	21.5
Household activities	15	72	13
Watching TV together	16.5	68.3	15.2
Gardening together	11.4	77.2	11.4
Preparing meals together	17.7	70.9	11.4
Help with schoolwork	17	75	8
School pickup or dropoff	22.8	72.1	5.1
Helping with homework	13.9	78.5	7.6
Reading together	13.9	73.4	12.7
Drawing together	15.2	77.2	7.6
Family celebrations	18	78	4
Going to child's birthday celebration	15.2	78.5	6.3
Spending Christmas and holidays together	25.3	70.9	3.8
Child comes to your birthday celebration	12.6	86.1	1.3

Table 3: Grandparents' degree of satisfaction (M/SD) with the five categories of activities shared with grandchildren.

Family celebrations (M/SD)	Help with schoolwork (M/SD)	Household activities (M/SD)	Cultural transmission (M/SD)	Play (M/SD)
1.05 / .16	1.60** / .35	1.43 / .33	1.37 / .31	1.36 / .33

***p* = .001

gory *Family celebrations* ($U = 204.000$; $p = .008$; $PS_{est} = .34$) than those who live closer.

Satisfaction by frequency of activities. Grandparents reported greater satisfaction when they perform fewer activities from the categories *Help with schoolwork* ($H = 7.709$; $p = .021$; $E^2 = .09$), *Household activities* ($H = 12.463$; $p = .002$; $E^2 = .16$), and *Play* ($H = 17.184$; $p = .000$; $E^2 = .22$).

Frequency of contact with grandchild by grandparent's sex. Grandmothers reported spending more hours per day with their grandchildren than grandfathers, with a mean of 6.71 hours for the grandmothers 3.85 hours for the grandfathers ($U = 467.500$; $p = .019$; $PS_{est} = .34$), although these subgroups are not homogeneous.

Frequency of activities by hours spent together. A significant negative correlation was found between the number of hours spent by grandparents on shared activities with their grandchildren and the frequency of these activities, such that the greater the number of hours spent together, the lower the frequency of activities in the categories *Household activities* ($r(76) = -.255$; $p = .024$), *Cultural transmission* ($r(76) = -.247$; $p = .029$), and *Play* ($r(76) = -.239$; $p = .035$).

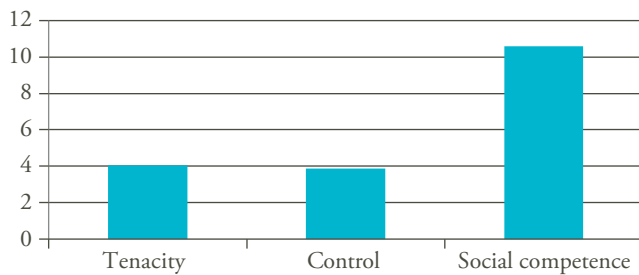
Determining the grandparents' degree of resilience and observing possible relationships with sociodemographic variables.

Overall resilience. Scores fell between 49 and 82 points ($M = 67.07$, $SD = 8.86$). It is noteworthy that of the three

resilience levels defined (low, medium, and high), there were no grandparents in the low group, only in the groups for medium (26.6%) and high (73.4%) resilience.

Resilience by subscale. Higher scores were recorded for the items on the *Social competence* subscale ($M = 10.06$, $SD = .66$) than for the items on the subscales for *Tenacity* ($M = 4.05$, $SD = .58$) and *Control* ($M = 3.88$, $SD = .56$). See [Figure 1](#).

Figure 1: Resilience in participating grandparents in each of the three subscales.



Resilience by activity and satisfaction. Grandparents with high resilience reported greater satisfaction in the following activities shared with their grandchildren: “Playing outside” ($\chi^2(3,79) = 9.985$; $p = .020$; $V = .35$), “Recounting stories from the past” ($\chi^2(3,79) = 7.95$; $p = .029$; $V = .31$), “Preparing meals together” ($\chi^2(3,79) = 9.777$; $p = .021$; $V = .35$), “Drawing together” ($\chi^2(3,79) = 9.388$; $p = .025$; $V = .34$) and “Going to child’s birthday celebration” ($\chi^2(3,79) = 9.572$; $p = .045$; $V = .32$).

Resilience by subscale and SPS in the intragroup of grandmothers. Higher significant scores ($U = 201.000$; $p = .039$; $PS_{est} = .32$) were recorded for the items on the *Social competence* subscale for grandmothers with higher sensitivity ($M = 10.23$, $SD = .63$) than for those grandmothers with lower sensitivity ($M = 9.83$, $SD = .66$).

Resilience by SPS in the intragroup of grandmothers. Higher significant scores ($U = 201.500$; $p = .044$; $PS_{est} = .32$) were recorded for the higher sensitive grandmothers ($M = 68.44$, $SD = 8.78$) than for the lower sensitive ones ($M = 63.88$, $SD = 7.62$).

Resilience by educational level. Grandparents with higher educational levels scored higher on the *Social competence* subscale ($H = 10.156$; $p = .006$; $E^2 = .13$), on the two items (“You enjoy challenges, wagers, or dares” and “You work to achieve your goals without worrying about the difficulties you may encounter on the way”).

Determining the degree of degree of sensory processing sensitivity (SPS) in the participant sample and observing possible relationships with sociodemographic variables.

Overall SPS. The grandparents in the sample had an overall SPS score falling between 45 and 123 points ($M = 87.35$, $SD = 18.41$). When SPS scores were divided into

three groups, we found that 38% fell into the low group, 62% were in the medium group, and 0% were in the high group or highly sensitive persons (HSPs).

SPS by activity and satisfaction. The grandparents with higher scores in the HSPS reported greater satisfaction with the activities from the category *Cultural transmission*: “Teaching childhood songs” ($\chi^2(3,79) = 9.116$; $p = .019$; $V = .34$) and “Recounting stories from the past” ($\chi^2(3,79) = 12.897$; $p = .005$; $V = .40$).

SPS by sex. Although there were no significant differences, scores tended to be higher for grandmothers than for grandfathers, respectively ($M = 89.63$ vs $M = 82.96$). Again, in the present study, these groups are not homogeneous.

SPS by proximity of residence. The grandparents with higher scores in the sensory processing sensibility live further away ($M = 98.10$; $SD = 20.43$) from their grandchildren ($U = 182.500$; $p = .049$; $PS_{est} = .30$) than those grandparents who live nearer ($M = 84.96$; $SD = 18.07$).

DISCUSSION

Considering the first set of results on changes to shared activities after the COVID-19 lockdown period, certain changes were observed, given that pandemic restrictions made it difficult to carry out these activities as before. However, contrary to the social distancing and public health rules recommended even after the pandemic lockdown, these changes were not significant; many participants responded that they maintained a frequency of activities similar to that of pre-pandemic times and that confirms grandparents’ tendency to use relational maintenance behaviors (Mansson, 2019). But in this case, apart from being during the less restricted second year of the pandemic, it may be due to the fact that two-thirds of the sample were grandmothers and only one-third grandfathers; in a previous study assessing the same shared activities but in the first months of the pandemic, involving only grandfathers and their grandchildren (Castañeda-García et al., 2022), the differences in frequency of activities before and during the pandemic were indeed significant. Grandfathers may perceive less obligation to engage in these intergenerational family interactions (Noriega García, 2015) and delegate these tasks to other people, such as grandmothers (Leseberg & Manoogian, 2019).

In relation to the second part of our first aim, satisfaction with the shared activities, most participants, in particular the grandmothers, expressed satisfaction. This shows that this intergenerational interaction continues to be perceived subjectively as positive, despite these individuals’ vulnerability under the prolonged pandemic (Mueller et al., 2020), even without having inquired into the degree of desirability of these interactions. More specifically, greater satisfaction was reported for activities under the category *Help with schoolwork*. This may be because

such activities allow grandparents to feel fulfilled and that they are contributing something to their grandchildren and family members (Warburton et al., 2006); also, this is an activity that can be done remotely, as found in studies conducted both in the first year of the pandemic (MacDarby et al., 2020) and in the second year, like the present study, where virtual or remote communications were found to have increased considerably and to participants' satisfaction (Alonso Ruiz et al., 2022; Falcón et al., 2022; Méndez et al., 2022).

On the other hand, the lower satisfaction reported for activities under *Family celebrations*, which are traditionally held in person and are among the most satisfying (Castañeda-García et al., 2017), may be directly linked to concerns, even after a year of COVID-19 lockdown, about the social distancing requirements – especially for high-risk individuals such as grandparents – that form part of COVID-19 prevention measures. Grandparents may therefore be concerned about participating in family celebrations (Gundogan, 2021), which may in turn explain some part of the results observed here of greater satisfaction correlating with greater distance between grandparents' and grandchildren's places of residence.

For the other sociodemographic variables, we found that younger grandparents reported the greatest satisfaction. This may be due to the fact that older grandparents must exert themselves more, both physically and mentally, to participate in intergenerational activities (Castañeda-García et al., 2021; Osuna, 2006). Similarly, considering that COVID-19 risk and vulnerability increase with age (Mueller et al., 2020), it may be that these grandparents do not feel safe in interactions that are not in line with protection measures.

Considering the greater satisfaction reported for the three categories of *Help with schoolwork*, *Household activities*, and *Play* when these occurred less frequently, this may be because these categories involve more dynamic activities than those under the categories of *Cultural transmission* and *Family celebrations*, which are more sedentary (Castañeda-García et al., 2021); thus, the greater physical exertion required may lead to reports of lower satisfaction with the role (Triadó et al., 2009).

For those participants with average to poor health, for whom the least satisfying activities were those in the category of *Cultural transmission* (“Teaching childhood songs”, “Telling children's stories” and “Recounting stories from the past”), this may be directly related to cognitive aspects such as memory; here, Novoa et al. (2008) found that memory loss in older people may be associated with illness. With regard to cognitive problems caused by fear of COVID-19, some studies conducted at the start of the pandemic confirmed that these do exist (da Silva Castanheira et al., 2021; Gundogan, 2021). Furthermore, grandparents with average to poor health participate less often in shared activities. There is a link between health status and the (particularly physical) limitations that may be

encountered when participating in activities that require greater mobility (Castañeda-García et al., 2017).

The data collected on the amount of time spent together showed that the greater the number of hours spent with grandchildren, the lower the frequency of activities reported by grandparents in three categories (*Household activities*, *Play* and *Cultural transmission*). This may be due to a lower attentional awareness of these activities, since the time shared in those more repeated and habitual daily activities (meals, games, songs, etc.) would activate more automatic cognitive processes (implicit memory).

With respect to our second main aim, the variable of resilience, the fact that there were no low-scoring participants could be explained by the fact that the mean age of the study sample was 71, placing them in a life stage that is widely associated with high levels of resilience (Weitzel, 2021), and represents a strength in the context of pandemic vulnerability. We therefore see medium and high resilience scores in our participants and, further, the subscale showing the highest score was that of *Social competence*. This subscale also received the highest scores from the participants with the highest educational level, a profile that shows an ability to confront and overcome challenges in roles associated with caregiving (Manomenidis et al., 2019).

Also, highly resilient persons reported higher scores for the activity “Playing outside”, and also reported greater satisfaction with this activity, as well as with “Preparing meals together”. This may be due to the fact that these require greater physical exertion than the other activities listed and that this group of individuals is also known for overcoming physical challenges as well. But, those more resilient grandparents were also more satisfied with the sedentary activities like “Recounting stories from the past” and “Drawing together”, which require more cognitive concentration. This double fact could show that resilience is a beneficial factor in grandparents who interact with their grandchildren.

In relation to our third objective, the variable of SPS, we found that 62% of participants reached levels that would qualify them as medium, and nobody the high levels (HSP) associated with more vulnerability. This confirms and reinforces the results, albeit scarce, of previous studies that the older the age, the lower sensory processing sensitivity (Humes et al., 2013; Pohl et al., 2003), and represents a strength in the prolonged pandemic context. Also the result that those grandparents with higher scores in the HSPS were more satisfied with cultural activities with their grandchildren, as has been associated with the HSP population for their higher sensitivity to art and creativity (Bridges & Schendan, 2019).

Finally, we found that of all participants, the higher in the HSPS tended to be those who live furthest from their grandchildren. Given the absence of previous research in this specific aspect, that may be related in part to the tendency, conscious or unconscious, that these individuals

have to seek out surroundings that shield them from physical and social stress, in keeping with Factor V (harm avoidance) as identified by Chacón et al. (2021) and represented in the key item on the HSPS: “*I find myself needing to withdraw during busy days, into bed or into a darkened room or any place where I can have some privacy and relief from stimulation*”. More research is needed in this aspect of grandparenting to analyze possible relationships with those studies that have shown that highly sensitive mothers experience some parenting difficulties (“*I regret having become a parent*”) (Aron et al., 2019). Also, there may be a relationship with those studies that have identified possible negative associations between the transition to parenting and measures of well-being in highly sensitive individuals (Schmückle et al., 2017). In sum, by exploring and adapting the parental subjective experience (PSE) to highly sensitive grandparents, and also asking them how close they wish to live to their family, we may be able to help answer this and other questions and see if there are similarities in how HSPs respond to these two successive family roles.

Study limitations include the small sample of grandfathers subgroup and the scarce research conducted to date relating COVID-19 to satisfaction with specific activities shared between grandparents and grandchildren, as previously studied by authors such as Dunifon et al. (2018), or relating it to resilience (Zheng et al., 2020) or SPS. Another important limitation is that the grandchild's age (which ranged from 2 to 18) was not included as a variable in this study. Age may have influenced the frequency of interactions with grandparents, given the changing developmental needs of grandchildren – it is not the same to interact with a 6-year-old grandchild as with a 13-year-old one (Rico et al., 2001).

In sum, our results show that this group of grandparents maintain activities with their grandchildren, feel satisfied with this, and show a certain level of strength (high resilience and medium SPS). This type of grandparent will probably be more satisfied with interactions with their grandchildren than a grandparent with more vulnerability (low resilience and high SPS/HSP). These two variables may predict a certain well-being in the grandparents who interact with their grandchildren – and it is already well known that this well-being is transmitted between generations (Griggs et al., 2010).

Continuing to study satisfaction as a variable in the most cherished intergenerational relationships, as compared to those that are less desired, could be important for both grandparents and grandchildren, not only for the positive effects they have on both physical health, by encouraging motor activity and cognitive health, by activating the mind and keeping it in good working order (Rafael et al., 2021; Sneed & Schulz, 2019), but also because they promote socio-emotional health by fostering links of attachment and belonging (Condon et al., 2020). In relation to the strength variable studied here, the the-

ory of resilience and relational load (Afifi et al., 2016) states that skills-based training could introduce relational maintenance behaviors to grandparents and encourage them to identify ways to integrate (or, in some cases, continue enacting) simple behaviors in their relationships with their grandchildren (McNallie & Gettings, 2021).

Greater interest in studying factors of vulnerability in older people, such as the lesser-known SPS, and given its greater potential to benefit psychologically from different psychoeducational interventions (Nocentini et al., 2018; Pluess & Boniwell, 2015), for the moment in younger populations, could help optimize this intergenerational relationship, and not only under exceptional high-stress circumstances.

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