

ORIGINAL ARTICLE

Open Access



A change is (not) gonna come: a 20-year overview of Italian grandparent–grandchild exchanges

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Abstract

Levels of coresidence, residential proximity, face-to-face contacts and intergenerational support exchanges remain overall high and stable across European countries. However, to date, few studies have focused on trends in grandparent–grandchild relations. Therefore, this study aims to investigate whether and to what extent grandparent–grandchild exchanges have changed over time. We used data from the Italian *Family and Social Subjects (FSS) Surveys*, covering the years 1998–2016, and considered three different currencies of exchanges between grandparents and their grandchildren (coresidence, face-to-face contacts, and grandchild care provision). Our results showed stability over time in coresidence, a small reduction in daily contacts (from 47% in 1998 to 39% in 2016) and an increase in grandchildren care (from 78% in 1998 to 82% in 2016). In addition, we found little changes in the associations between such indicators of intergenerational exchanges and the demographic and socio-economic determinants usually used to explain them. Despite changes among Italian grandparents such as increases in their age profile, in education, and in marital disruption, the relations between grandparents and their grandchildren have so far remained stable over time, with generally high levels of intergenerational exchanges.

Keywords: Grandparents, Grandchildren, Intergenerational exchanges, Trends, Grandparenting, Grandchild care provision, Face-to-face contacts, Coresidence, Family, Ageing, Italy

Introduction

Although several studies have hypothesised that industrialisation and urbanisation would lead to a convergence of family life towards the nuclear family and a decline in intergenerational exchanges (Popenoe, 1993), evidence at the beginning of the twenty-first century suggests that levels of solidarity between family members across generations remain overall high and stable (Kalmijn & De Vries, 2009), although trends depend also on the dimensions of intergenerational solidarity that underlie and shape the relations and exchanges between the generations (Grundy, 2000; Grundy & Shelton, 2001; Mazurik et al., 2020; Pilkauskas & Cross, 2018; Ruggles, 2007; Steinbach et al., 2020; Treas & Gubernskaya, 2012; van der Pas et al., 2007).

To date, however, most of the research on trends in intergenerational family exchanges has focused on parent–child relationships, excluding family relations across more than two adult generations and grandparent–grandchild relationships in particular. Increased life expectancy means that it is now quite common for children to grow up, while their grandparents and even great grandparents are still living (Murphy, 2011; Post et al., 1997). Moreover, it is often assumed that in response to socio-demographic changes, such as more mothers in the labour market and higher levels of divorce and separation, grandparents are increasingly more likely to play an important role as providers of financial, emotional, and practical support (Herlofson & Hagestad, 2012), especially in countries, where public services are limited (Di Gessa et al., 2016a, 2016b; Zamberletti et al., 2018).

Few studies have investigated trends in grandparent–grandchild relationships. Research on intergenerational households shows complex trends, with declines in three-generation households between 1981 and 2001 in Austria, France, Greece, and Portugal but increases in Romania and the US as well as in England and Wales in the first decades of the twenty-first century (Albuquerque, 2011; Glaser et al., 2018). To our knowledge, Geurts et al. (2015) were the only authors who investigated changes in grandchild care, whereas no research has focused on trends and changes in contacts between grandparents and grandchildren.

Thus, our paper aims to describe trends in grandparents–grandchildren exchanges in Italy. We use data from four waves of the Italian *Family and Social Subjects (FSS)* Surveys which cover a period of nearly 20 years (from 1998 to 2016) and consider three measures of intergenerational exchanges, that is coresidence, face-to-face contacts, and childcare provision. Our study also examines the socio-economic and demographic characteristics associated with each measure of intergenerational exchanges over time; and whether these associations have changed over time.

Background

Cross-country and over-time changes in intergenerational parent–child relationships are related to several structural socio-demographic and health factors that may play a major role in shaping such exchanges (Albertini & Kohli, 2013; Hank, 2007; Tomassini et al., 2004a). Grandparent–grandchild exchanges are embedded within multigenerational family systems and are, therefore, contingent upon grandparent–parent relationships (Mueller & Elder, 2003); it can be hypothesised that factors affecting parent–child relationships might ‘spill over’ to influence also grandparent–grandchild relationships. For instance, divorce of grandparents (G1) or their children/children-in-law (G2) may reduce G1–G2 relationship quality, mutual support, and contacts perhaps due to greater geographic mobility, social disapproval from family or friends, or loss of reciprocal obligations (Cherlin & Furstenberg, 1992; Ganong & Coleman, 2006). This, in turn, could negatively affect G1’s level of involvement and contact with their grandchildren (G3) (Albertini & Tosi, 2018; Oppelaar & Dykstra, 2004; Taylor et al., 2005). Other pivotal demographic and social transformations, such as the increase in the level of education and labour force participation of older generations, and women in particular—are also thought to be associated in complex ways with G1–G3 exchanges, for both structural and cultural reasons (Kalmijn, 2006). For example, as highly educated people are

hypothesised to be more individualistic (Thornton & Young-DeMarco, 2001) and are more likely to live farther away from their family members (Silverstein, 1995), one can expect highly educated grandparents to have fewer contacts with their grandchildren and to be less likely to provide intensive grandchild care as they prefer to be 'busy with' social and leisure activities (McGarrigle et al., 2018). Changes in the labour market participations often assume that grandparents would increase their engagement in grandchild provision as more mothers are employed (Geurts et al., 2015). However, as more grandparents and grandmothers in particular are also encouraged to participate in the labour market, G1–G3 exchanges (and childcare provision in particular) may decline as workers tend to have less time for caring responsibilities (Di Gessa et al., 2016a; Hank & Buber, 2009; Igel & Szydlik, 2011). Health status has an ambiguous association with intergenerational exchanges: older people tend to interact with younger generations either when they need support, because health problems occur, or when they are fit and healthy enough to care for them (Tomassini et al., 2004b). Specific studies on grandparents have found that health is an important factor affecting their ability to look after grandchildren (Di Gessa et al., 2016b; Glaser et al., 2013) as well the frequency of contact with grandchildren (Oppelar & Dykstra, 2004). In addition, demographic trends in fertility may shape variations in intergenerational exchanges between generations over time (Grundy & Read, 2012; Tomassini et al., 2004a). Increases in the age at motherhood (and in the age at grandparenthood) could reduce grandparent–grandchild exchanges, as older grandparents are generally less likely to provide care for their grandchildren (Zamberletti et al., 2018) and to have contacts with them (Uhlenberg & Hamill, 1998). Declines in family size and in number of grandchildren could affect G3–G1 relationships in different ways. For example, when analysing childcare provision, grandparent with a large number of grandchildren may find it difficult to provide regular and intensive hours of care to each of them (Uhlenberg & Hamill, 1998; Zamberletti et al., 2018). It is possible that, when it comes to face-to-face contacts, one could postulate that grandparents with fewer grandchildren would have less contact with them due to the shrinking of the potential pool available to them (Aassve et al., 2012). Finally, mobility of younger generations and patterns of migration among adult and younger children in particular may weaken G3–G1 relationships and face-to-face exchanges, even though, to date, evidence suggests that the proportion of older parents with at least one child (and, therefore, a potential grandchild) in close proximity remains high (Tomassini & Lamura, 2009; Wolf & Longino, 2005).

Given the socio-demographic changes that occurred in recent decades in European countries, with increasing educational attainments, general upward trends in divorce rates, increasing labour force participation of women and of those in later life, as well as an overall postponment of the age of birth of the first child and a reduction in family sizes, it is reasonable to believe that grandparent–grandchild relationships might have changed over time. However, to date, very few studies have analysed changes in this relationship, partly because questions about grandparents' exchanges with their grandchildren (including coresidence, grandchild care, and contact) have been only recently introduced in large quantitative surveys and not always with comparable questions over time (Hank et al., 2018). A cross-country comparison on trends in coresidence between grandparents and grandchildren by Glaser et al. (2018) showed relatively stable and low

prevalence of three-generation households in the European countries they considered between 1970 and 2002, with the exception of the US and Romania with increasing incidence. To our knowledge, Guerts and colleagues' work (2015) is the only study that investigated changes in the provision of grandparental care over time. Using data from the Longitudinal Aging Study Amsterdam and focusing on grandparents aged 58–68 in 1992 and in 2006, the authors found that the probability of grandparental care increased from 23% in 1992 to 41% in 2006, and that this increase in grandchild care provision was mostly attributable to higher rates of mothers' participation to the labour force, the higher incidence of single motherhood, as well as having fewer grandchildren (and 'less competition among them'). However, Guerts et al. (2015) also found that increases in grandparents' own employment reduced grandchild care provision.

Overall, the knowledge of changes over time in the relationships between grandparents and grandchildren remains limited, with no studies so far that have investigated face-to-face contacts. This paper, therefore, contributes to this gap by investigating changes in grandparent–grandchild relationships over almost 2 decades in Italy. We consider three types of exchanges (namely, coresidence, contact and grandparental childcare) in a country, Italy, known for its modest availability of formal support for children (Bordone et al., 2017; Saraceno, 2020), and for its recent dramatic societal and demographic shifts, including reduced and delayed fertility, postponements of age at grandparenthood (Di Gessa et al., 2020a) and increased female labour market participation (Mancini, 2017). Understanding trends in grandparent–grandchild exchanges and the stability/change in the effects of the factors associated with them may prove particularly useful in a country, where grandparents play an important role in society and family life. In Italy, about 43% of grandchildren aged 0–13 are cared for by grandparents aged 50 and older occasionally and about 30% are looked after by them almost daily when their parents are at work (Zamberletti et al., 2018). The availability of such informal childcare is key to the Italian maternal labour force participation, particularly among the most socio-economically disadvantaged mothers (Arpino et al., 2014).

This paper, therefore, aims to describe changes in grandparent–grandchild relationships (measured in terms of coresidence, contact, and care) in Italy, and specifically to answer the following research questions:

- RQ1. Have grandparent–grandchild exchanges changed across time in Italy?
- RQ2. To what extent are potential changes in intergenerational exchanges over time due to (a) population compositional factors (such as education, employment, living arrangements, etc.) and/or to (b) the changes of the association between them over time?

Data and methods

Study population

Data is drawn from the *Family and Social Subjects (FSS)* surveys carried out by the Italian Institute of Statistics (ISTAT) in 1998, 2003, 2009 and 2016 (the latter released in mid-2020). These are independent nationally representative cross-sectional studies based on Italian private households selected from the Register of Population, which

collect information on a range of demographic and socio-economic characteristics.¹ The response rate for each survey ranges between 75 and 80% (ISTAT, 2016).

The analytic sample is restricted to respondents aged 35+ who are grandparents² and it consists of 9578 individuals in 1998 (that is, 30.26% out of the 31,648 individuals aged 35+), 10315 in 2003 (34.24%), 9659 in 2009 (34.48%) and 6255 in 2016 (31.80%). As detailed in the results section below, samples for all surveys were smaller when we considered the provision of care to grandchildren as questions related to this topic were collected only about up to three non-coresidential grandchildren aged 13 or younger.

Outcome variables

We consider three measures of grandparent–grandchild exchanges: co-residence with at least one grandchild, face-to-face contacts, and frequency of provision of grandchild care. Grandparents are classified as co-residing with a grandchild if they report that at least one of their grandchildren live with them in the same household. Grandparents are also asked about the frequency of face-to-face contact with up to three non-coresidential grandchildren (*once a day, more than once a week, once a week, less than four times a month, few times a year and never*). We distinguish between grandparents who have daily face-to-face contacts³ with at least one of the grandchildren vs those who have less frequent contacts. In all surveys, grandparents with at least one grandchild below the age of 13⁴ are asked for up to three grandchildren whether and during which occasions they look after them (i.e., *Never; When their parents work; During occasional commitments of parents; When parents want to go out in their free time; During the holiday periods; When the grandchild is sick; In times of emergency; Other*). Using this information, we distinguish four types of hierarchical mutually exclusive grandparental childcare: intensive (i.e., those who look after at least one grandchild when parents are at work); holidays caregivers (i.e., those who provide grandchild care during the holidays—which last about 12/13 consecutive weeks in the summer—but not when parents are at work), occasional (i.e., grandparents who mostly reported grandchild care on a non-regular basis to help parents on specific occasions but not during holidays and when parents are at work) and those grandparents who never care their grandchildren.

Independent variables

In line with extensive literature investigating individual characteristics associated with coresidence, grandparent–grandchild contacts, and grandparental childcare, we consider several grandparents' characteristics in our study (Bordone et al., 2017; Di Gessa et al., 2016a, 2016b, 2020b; Fuller-Thomson & Minkler, 2001; Hank & Buber, 2009; Herlofson & Hagestad, 2012; Igel & Szyklik, 2011). As indicators of socio-demographic

¹ The last survey, collected in 2016, differs from the previous ones as it does not cover information of all the household members but only of the main respondents. However, the distribution of the main individual characteristic does not differ across surveys.

² In all surveys, only respondents aged 35+ are asked if they are grandparents. For consistency, we used the age threshold identified by ISTAT in all our analyses.

³ We use this threshold as more than 40% of grandparents report daily contacts with their grandchildren in each survey. Additional analyses (available upon request) carried out using a dichotomous variable which distinguished between 'at least weekly' vs 'less frequent' contact showed similar findings. Respondents having coresident grandchildren only were excluded from this analysis.

⁴ Descriptive statistics on this subsample are listed in Table 6 of the Appendix.

characteristics we control for grandparent's gender, their age (< 49; 50–59; 60–74; 75+),⁵ marital status (*Married/cohabiting; Widowed; Separated/Divorced/Never married*) and macro-region of residence (*North; Centre; or South of Italy*). As indicators of grandparents' socio-economic circumstances, we include educational attainment (*High school diploma or above vs lower educational attainments*) and working status (*In paid work; Retired; Other*) at the time of the interview. None of the surveys collect information on wealth. Therefore, as indicators of financial wellbeing, we include a dichotomous variable indicating whether grandparents receive an income or not. In addition, as an indicator of health, we control for the presence of chronic diseases as this is the only measure of health comparable across the four surveys. In particular, for the first two waves (1998 and 2003) grandparents are asked whether they suffer from a chronic illness or a permanent disability that reduces personal autonomy and requires the help of other people. In the 2009 and 2016 surveys, however, respondents have to report whether they have severe, non-severe, or no limitations to daily life activities. We created a single variable distinguishing grandparents without any limiting diseases from those who had limiting long-standing illness or disability. Finally, we also include grandchild's characteristics, as family structures have been associated with grandparent–grandchild relationships and childcare provision (Di Gessa et al., 2016a, 2016b; Herlofson & Hagestad, 2012; Igel & Szyklik, 2011; Zamberletti et al., 2018). In particular, we include the total number of grandchildren grandparents have, as grandparents with more grandchildren may limit the amount of support and interactions they can provide to a specific one. We also control for geographical distance to the nearest grandchild (*at least one grandchild living < 1 km including co-residence; the closest grandchild living between 1 and 16 km; all of them living 16 km or more*).⁶ To avoid any issue related to a possible overlap between co-residence and proximity effects, this variable has been included only in the last two models on daily face-to-face contacts and childcare.

Statistical model

First, to investigate the associations between grandparents' characteristics and exchanges over time, we employ logistic and multinomial logistic regression models both by pooling waves and using a timing variable as a covariate, and by separating the analyses by wave (1998, 2003, 2009, and 2016). In particular, logistic models are used to study co-residence with at least one grandchild (*Model 1*) and daily contacts with grandchildren (*Model 2*), while multinomial models are used for grandchild care (*Model 3*). Second, to test whether the estimated associations change over time (null hypothesis $H_0: \beta_{1998} = \beta_{2016}$), a pooled sample multivariate model is estimated interacting the survey timing with each covariate (available upon request). The test statistic for the interaction coefficient between each covariate described above and the survey timing variable (1998 as reference category) is reported in all tables. To ease the interpretation, we compute the Average Marginal Effects (AMEs) which express how the probability of observing the outcome changes when a specific independent variable changes. All the analyses are performed using Stata 15.1.

⁵ Due to a privacy issue, ISTAT releases only a 10 years categorical variable.

⁶ Living proximity has not been included in the model exploring the likelihood of co-residing with at least one grandchild.

Results

RQ1. Have grandparent–grandchild exchanges changed across time in Italy?

Table 1 (top part) lists the weighted distribution of the main indicators of grandparent–grandchild exchanges over time, which allow us to answer the first research question (RQ1). From a descriptive perspective, the prevalence of grandparents living with at least one grandchild broadly remained stable across time at about 7%. The prevalence of grandparents reporting daily face-to-face contact with grandchildren decreased by almost 8 percentage points from 47.7% in 1998 to 39.4% in 2016. The distribution of grandchild care provision changed over time with an increase of about 10 percentage points in the number of grandparents providing intensive care between 1998 and 2016. A slightly decrease has been observed among those who looked after grandchildren occasionally (39% in 1998 vs 34% in 2016). The percentage of grandparents who cared during the holidays remain constant during the considered period. Finally, the percentage of grandparents who never looked after grandchildren decreased from about 21% to 17% in the latest wave.

These trends in grandparent–grandchild exchanges show a general stability over the last 20 years in intergenerational coresidence, a slightly increase of those reporting to care grandchild(ren) and a slight reduction in face-to-face contacts. These trends were also confirmed by pooled regression analyses using survey timing as covariate (available upon request).

RQ2a. To what extent are potential changes in intergenerational exchanges over time due to population compositional factors?

Table 1 (bottom part) shows weighted descriptive statistics of grandparents' demographic and socio-economic characteristics over time (RQ2a). Gender, marital status, paid employment and income remained broadly stable over time. Women represented 60% of grandparents in each survey considered; there was an increase in the percentage of divorced/separated/never married grandparents (from 3% in 1998 to almost 8% in 2016), although two-thirds of grandparents were married throughout; only one in ten grandparents were in paid work; finally, about 85% of them had their own income. The geographical macro area of residence did not change significantly, with about 45% of grandparents residing in the North of Italy as for the general population. However, grandparents' age profile, their education, and the average number of grandchildren changed dramatically over time. For instance, whereas in 1998, 24% of grandparents were younger than 60 and 27% were aged 75 and older, about 20 years later the percentages were 14 and 38, respectively. Moreover, the percentage of respondents with at least a high-school degree rose from 9% in 1998 to 22% in 2016. In addition, in less than 20 years, the average number of grandchildren decreased from 3.48 in 1998 to 2.97 in 2016. Finally, the distance to their closest grandchild increased slightly over time with 12% of grandparents having their closest grandchild more than 16 km away in 1998 compared to 17% in 2016. Changes of compositional factors over time have been additionally confirmed by statistical tests (see Table 5 for a summary of main findings).

Table 1 Weighted descriptive characteristics of respondents by year

N	Descriptive statistics by wave			
	1998	2003	2009	2016
	9578	10,315	9659	6255
Intergenerational exchanges				
Coresidence with at least 1 grandchild	7.65	7.05	5.81	7.18
Contacts with at least 1 grandchild				
Daily	47.72	45.08	42.56	39.40
Grandchild caregiving				
Never	21.58	22.20	17.64	17.94
Parents work	29.50	33.39	34.48	39.29
Occasional	39.75	35.98	37.74	34.08
Holidays	9.17	8.42	10.13	8.67
Demographic and socio-economic characteristics				
Women	60.21	59.92	59.97	59.33
Age class				
< 49	6.58	2.38	2.30	2.37
50–59 (ref.)	17.42	16.00	14.63	12.18
60–74	53.35	51.18	47.57	47.11
75+	26.60	30.43	35.50	38.34
Marital status				
Married	68.35	68.28	67.42	66.57
Widow	28.30	27.95	26.54	25.70
Divorced/separated/Never married	3.35	3.77	6.04	7.73
Macro-region of residence				
North	44.50	44.27	44.06	44.72
Centre	21.10	20.96	21.40	19.74
South	34.40	34.77	34.54	35.53
Education				
High school diploma	9.02	10.39	13.63	21.86
Working status				
At work	10.95	11.24	10.93	11.66
Other	53.50	57.47	55.74	57.14
Retired	35.55	31.29	33.33	31.20
Own Income				
Yes	84.41	85.04	84.52	83.92
Chronic disease	17.69	18.21	14.64	13.04
Number of grandchildren (Mean; SD)	3.48 (3.25)	3.34 (2.84)	3.15 (2.64)	2.97 (1.91)
Living proximity				
< 1 km (included coresidence)	51.99	51.79	46.02	45.27
Between 1 to 16 km	35.09	34.63	37.50	36.94
> 16 km	12.92	13.58	16.49	17.79

Family and Social Subjects (FSS) Survey, ISTAT. Weighted data

RQ2b. To what extent are potential changes in intergenerational exchanges over time due to the changes of the association between them over time?

Coresidence with grandchild(ren)

Tables 2, 3 and 4 show predicted probabilities related to grandparent–grandchild exchanges indicators (RQ2b). Table 2 shows AMEs from the logistic regression model

Table 2 Logistic regression models estimating the Average Marginal Effects (AMEs) of having at least one coresident grandchild among all grandparents by year

Variables	Coresidence—Logit AMEs (SE)				
	With at least one grandchild				$\chi^2 \varphi_{0\rho} H_0:$ $\beta_{1998} = \beta_{2016}$
	1998	2003	2009	2016	
Women	0.000 (0.007)	− 0.000 (0.006)	− 0.012** (0.006)	− 0.007 (0.007)	n.s.
Age class < 49 (ref. 50–59)	0.066*** (0.023)	0.052*** (0.022)	0.096*** (0.028)	0.144*** (0.048)	n.s.
Age class 60–74 (ref. 50–59)	− 0.004 (0.009)	− 0.007 (0.007)	− 0.025*** (0.010)	− 0.060*** (0.016)	***
Age class 75+ (ref. 50–59)	0.032*** (0.011)	0.022** (0.010)	− 0.023 (0.011)	− 0.062*** (0.018)	***
Widow (ref. Married)	0.121*** (0.010)	0.079*** (0.008)	0.085*** (0.009)	0.046*** (0.011)	***
Divorced/separated/Never married (ref. Married)	0.047** (0.018)	0.028** (0.013)	0.039*** (0.011)	− 0.006 (0.009)	**
Macro Region of residence: Centre (ref. North)	0.061*** (0.008)	0.027*** (0.007)	0.026*** (0.007)	0.053*** (0.010)	n.s.
Macro Region of residence: South (ref. North)	− 0.014** (0.163)	− 0.005 (0.010)	− 0.004 (0.008)	− 0.001 (0.008)	n.s.
High school diploma	− 0.041*** (0.006)	− 0.036*** (0.005)	− 0.006 (0.005)	− 0.020** (0.006)	n.s.
Working status: Working (ref. Retired)	0.026* (0.015)	0.044*** (0.014)	0.009 (0.011)	0.006 (0.013)	n.s.
Working status: Other (ref. Retired)	− 0.001 (0.007)	0.011* (0.006)	− 0.005 (0.006)	0.008 (0.009)	n.s.
Own income	− 0.018 (0.011)	− 0.032*** (0.010)	− 0.020** (0.008)	− 0.022* (0.012)	n.s.
Chronic conditions	0.012 (0.007)	0.006 (0.006)	0.018*** (0.006)	0.019** (0.009)	n.s.
Number of grandchildren	0.003*** (0.000)	0.001 (0.000)	0.001 (0.000)	− 0.002 (0.001)	***
Observations	9578	10315	9659	5893	

Family and Social Subjects (FSS) Survey, ISTAT

n.s. not significant

* $p < 0.1$; ** $p < 0.05$; *** $p < 0.01$

for coresidence with at least one grandchild. Overall, compared to grandparents age 50–59, those aged 49 and younger were more likely to live with at least one grandchild at each wave. Conversely, grandparents aged 75+ were significantly more likely to live with at least one grandchild in 1998 (AMEs = 0.032, $p < 0.01$) and 2003 (AMEs = 0.022, $p < 0.05$), while they were less likely to do so in 2009 (AMEs = − 0.023; $p > 0.1$) and in 2016 (AMEs = − 0.062; $p < 0.01$). Results also suggest changes in the associations between marital status and coresidence with grandchildren. Whereas widowed grandparents were significantly more likely than married ones to live with grandchild(ren) across all timepoints, the magnitude of this association decreased over time (i.e., AMEs 1998 = 0.121, $p < 0.01$; AMEs 2016 = 0.046, $p < 0.01$). Similarly, divorced/separated/never

Table 3 Logistic regression models estimating the Average Marginal Effects (AMEs) of daily contacts with grandchild among all grandparents by year

Variables	Face to face contacts—Logit AMEs (SE)				
	Daily vs less often				χ^2 φ ρ $H_0:$ $\beta_{98} = \beta_{16}$
	1998	2003	2009	2016	
Women	0.012 (0.011)	0.008 (0.010)	0.010 (0.010)	− 0.000 (0.013)	n.s
Age class < 49 (ref. 50–59)	− 0.005 (0.027)	− 0.029 (0.030)	0.009 (0.034)	− 0.080 (0.056)	n.s
Age class 60–74 (ref. 50–59)	− 0.071*** (0.012)	− 0.064*** (0.013)	− 0.041*** (0.015)	− 0.047** (0.021)	n.s
Age class 75+ (ref. 50–59)	− 0.166*** (0.016)	− 0.148*** (0.016)	− 0.173*** (0.017)	− 0.150*** (0.024)	n.s
Widow (ref. Married)	− 0.066*** (0.012)	− 0.051*** (0.011)	− 0.042*** (0.012)	− 0.033* (0.015)	n.s
Divorced/separated/Never married (ref. Married)	− 0.104** (0.028)	− 0.069*** (0.025)	− 0.128*** (0.021)	− 0.137*** (0.023)	n.s
Macro Region of residence: Centre (ref. North)	0.016 (0.011)	− 0.004 (0.011)	0.003 (0.012)	0.023 (0.016)	n.s
Macro Region of residence: South (ref. North)	0.037*** (0.010)	0.029*** (0.010)	0.035*** (0.010)	0.052*** (0.013)	n.s
High school diploma	− 0.059*** (0.016)	− 0.030** (0.015)	− 0.014 (0.014)	− 0.002 (0.014)	***
Working status: Working (ref. Retired)	− 0.002 (0.019)	− 0.016 (0.019)	− 0.021 (0.019)	0.010 (0.025)	n.s
Working status: Other (ref. Retired)	0.022* (0.012)	− 0.001 (0.013)	0.014 (0.012)	0.031** (0.017)	n.s
Own income	0.016 (0.016)	0.024 (0.017)	0.021 (0.016)	0.003 (0.022)	n.s
Chronic conditions	− 0.048*** (0.012)	− 0.035*** (0.012)	− 0.016 (0.012)	− 0.049*** (0.017)	n.s
Number of grandchildren	− 0.010*** (0.001)	− 0.013*** (0.001)	− 0.009*** (0.001)	− 0.013*** (0.003)	n.s
Living proximity with grandchildren: < 1 km (ref. > 16 km)	0.684*** (0.008)	0.639*** (0.008)	0.651*** (0.008)	0.614*** (0.010)	n.s
between 1 to 16 km (ref. > 16 km)	0.280*** (0.009)	0.286*** (0.009)	0.278*** (0.008)	0.286*** (0.011)	**
Observations	9103	9921	9318	5634	

Family and Social Subjects (FSS) Survey, ISTAT

n.s. not significant

* $p < 0.1$; ** $p < 0.05$; *** $p < 0.01$

married grandparents were significantly more likely to coreside with grandchild(ren) in 1998 (AMEs = 0.047, $p < 0.05$), 2003 (AMEs = 0.028, $p < 0.05$), and 2009 (AMEs = 0.039, $p < 0.01$) but not in 2016 (AMEs = − 0.006, $p > 0.1$). Living in the central regions of Italy was positively associated with the likelihood of living in the same house with at least one grandchild at all timepoints. Socio-economic indicators (education, employment, and

Table 4 Multinomial logistic regression models estimating the Average Marginal Effects (AMEs) of grandchild caregiving among all grandparents by year

Variables	Caregiving—Mlogit-AMEs (SE)									
	1998		2003		2009		2016		P	
	Caregiving (holidays)	Caregiving (Parents work)	Caregiving (holidays)	Caregiving (Parents work)	Caregiving (holidays)	Caregiving (Parents work)	Caregiving (holidays)	Caregiving (Parents work)	χ^2 φ_{00} $H_0: \beta_{98} = \beta_{16}$	χ^2 φ_{00} $H_0: \beta_{98} = \beta_{16}$
Women	0.008 (0.010)	0.048*** (0.016)	-0.002 (0.009)	0.037* (0.015)	0.001 (0.011)	0.036* (0.016)	-0.010 (0.012)	0.067*** (0.020)	n.s.	n.s.
Age class < 49 (ref. 50–59)	-0.008 (0.016)	0.042 (0.034)	-0.035* (0.018)	-0.051 (0.039)	-0.009 (0.026)	-0.055 (0.044)	-0.013 (0.032)	-0.119 (0.066)	n.s.	n.s.
Age class 60–74 (ref. 50–59)	0.021** (0.010)	-0.009 (0.016)	0.022** (0.010)	-0.027 (0.017)	-0.002 (0.012)	0.029 (0.019)	0.010 (0.015)	0.018 (0.027)	n.s.	n.s.
Age class 75+ (ref. 50–59)	0.037* (0.019)	-0.099*** (0.026)	0.024 (0.016)	-0.115** (0.025)	0.030* (0.018)	-0.087*** (0.025)	0.021 (0.021)	-0.028 (0.037)	n.s.	n.s.
Widow (ref. Married)	-0.030** (0.011)	-0.052*** (0.020)	-0.025** (0.011)	-0.044* (0.019)	-0.004 (0.013)	-0.067*** (0.020)	0.015 (0.019)	-0.064* (0.028)	*	n.s.
Divorced/separated/never married (ref. Married)	-0.043* (0.021)	-0.081* (0.041)	0.043** (0.024)	-0.056 (0.035)	-0.027 (0.017)	-0.010 (0.032)	0.021 (0.019)	-0.025 (0.037)	*	n.s.
Macro Region of residence: Centre (ref. North)	-0.012 (0.010)	-0.085*** (0.017)	-0.008 (0.009)	-0.002 (0.017)	-0.002 (0.011)	0.013 (0.019)	0.051*** (0.015)	-0.048* (0.025)	***	n.s.

Table 4 (continued)

Variables	Caregiving—Mlogit-AMEs (SE)								χ^2 φ_{00} H_0 : $\beta_{98} = \beta_{16}$	P
	Caregiving (holidays) 1998	Caregiving (Parents work) 1998	Caregiving (holidays) 2003	Caregiving (Parents work) 2003	Caregiving (holidays) 2009	Caregiving (Parents work) 2009	Caregiving (holidays) 2016	Caregiving (Parents work) 2016		
Macro Region of residence: South (ref. North)	0.043 (0.009)	-0.141*** (0.015)	0.064*** (0.009)	-0.137*** (0.014)	0.039*** (0.010)	-0.140*** (0.015)	0.047*** (0.011)	-0.178*** (0.020)	n.s.	n.s.
High school diploma	-0.009 (0.014)	-0.059* (0.022)	0.003 (0.011)	-0.013 (0.018)	0.012 (0.011)	0.027 (0.018)	0.028* (0.011)	0.015 (0.019)	***	***
Working status: Working (ref. Retired)	0.032* (0.018)	-0.074*** (0.026)	0.028 (0.017)	-0.139*** (0.025)	-0.010 (0.019)	-0.046* (0.026)	0.028 (0.023)	-0.000 (0.037)	n.s.	n.s.
Working status: Other (ref. Retired)	0.011 (0.013)	0.017 (0.021)	-0.003 (0.013)	-0.021 (0.020)	-0.033* (0.014)	0.080*** (0.021)	-0.021 (0.018)	0.171*** (0.031)	n.s.	***
Own income	-0.003 (0.015)	0.044** (0.024)	0.008 (0.015)	0.049* (0.025)	0.019 (0.015)	-0.016 (0.024)	0.022 (0.022)	-0.103*** (0.037)	n.s.	***
Chronic conditions	0.006 (0.014)	-0.020 (0.022)	0.019 (0.013)	-0.025 (0.023)	-0.014 (0.016)	0.015 (0.023)	0.052* (0.020)	-0.038 (0.039)	n.s.	n.s.
Number of grandchildren	-0.001 (0.001)	-0.013*** (0.003)	0.002 (0.001)	-0.012*** (0.003)	0.006*** (0.002)	-0.014*** (0.003)	0.002 (0.003)	-0.009* (0.005)	n.s.	n.s.

Table 4 (continued)

Variables	Caregiving—Mlogit AMEs (SE)								χ^2 $\phi_0 \phi$ H_0 : $\beta_{98} = \beta_{16}$	P
	Caregiving (holidays)	Caregiving (Parents work)	Caregiving (holidays)	Caregiving (Parents work)	Caregiving (holidays)	Caregiving (Parents work)	Caregiving (holidays)	Caregiving (Parents work)		
Living proximity with grandchildren: < 1 km (ref. > 16 km)	1998 − 0.421*** (0.021)	1998 0.333*** (0.016)	2003 − 0.376*** (0.019)	2003 0.334*** (0.016)	2009 − 0.305*** (0.019)	2009 0.317*** (0.017)	2016 − 0.362*** (0.023)	2016 0.350*** (0.022)	n.s.	n.s.
between 1 to 16 km (ref. > 16 km)	− 0.381*** (0.021)	0.218*** (0.017)	− 0.343*** (0.019)	0.254*** (0.017)	− 0.273*** (0.020)	0.212*** (0.017)	− 0.356*** (0.023)	0.310*** (0.022)	n.s.	n.s.
Observations	5230	5230	5516	5516	5031	5031	2754	2754		

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n.s. not significant

* $p < 0.1$; ** $p < 0.05$; *** $p < 0.01$

income) suggest that higher educated grandparents and those having an income were significantly less likely to coreside with their grandchildren at each survey considered compared to grandparents with low levels of educations and those without an income, while being in paid work was associated with higher likelihood of coresidence with grandchildren only in 1998 and 2003. Moreover, having chronic conditions or disabilities was associated with an increase of about 2 percentage points in the probability of living with at least one grandchild only in 2009 and in 2016. Finally, although the effect is minimal, the number of grandchildren was associated with increased likelihood of coresidence with at least one of them only in 1998.

In the last column of Table 2, p values for the change in the parameters of the same variable over time are listed; these values are obtained from the interaction between each independent variable and the survey timing (1998 vs 2016). If the p value is significant (i.e., <0.1), this suggests that the effect of the independent variable on the outcome considered was different in 2016 compared to 1998. According to this test, only the effects of age, marital status, and number of grandchildren were significantly different in 2016 compared to 1998. More in detail, compared with grandparents aged 50–59, those aged 60–74 and 75 and older were less likely to coreside in 2016 than in 1998 (see also Fig. 1, panel a in the Appendix). Similarly, respondents without a partner (widowed and never married/separated or divorced) were less likely to coreside with grandchildren in 2016 (Fig. 1, panel b in the Appendix). Finally, while an increasing number of grandchildren was associated with a higher probability to coreside in 1998, respondents with a high number of grandchildren were less likely to do so in 2016 (Fig. 3, panel c in the Appendix).

Face-to-face contact with grandchild(ren)

Table 3 shows AMEs obtained from logistic models for daily contacts with at least one grandchild. Older age was negatively associated with daily contacts and, specifically, individuals aged 75+ were about 14 to 17 percentage points less likely to have face-to-face contacts with their grandchild(ren) compared to those aged 50–59. Widowhood and union dissolution were negatively associated with grandparents–grandchildren physical contacts. Widowed grandparents were about 6 (1998) to 3 (2016) percentage points less likely to have daily contacts with grandchild(ren), while divorced/separated or never married were between 10 (in 1998) to 13 (in 2016) percentage points less likely to have so. Living in the South was associated with higher probability to have face-to-face contacts. Regarding socio-economic characteristics, the negative association between higher educational attainment and the frequency of contacts with grandchildren lost magnitude and statistical power over time. In detail, findings show that respondents with at least a high-school degree were about 5 percentage points less likely to have daily contacts with grandchild(ren) in 1998 ($p < 0.01$) and just about 3 percentage points less likely to have so in 2003 ($p < 0.05$), while this association was no longer statistically significant in 2009 and in 2016. Finally, while the number of grandchildren decreased the probability to have daily contacts with at least one of them, living close to them increased so. However, the association decreased of about 7 percentage points between 1998 and 2016.

According to the statistic test of changes in the association of each explanatory variables with the outcome over time (last column on Table 3), only the associations between

respondents' education, proximity to grandchildren and daily face-to-face contacts with grandchild(ren) were significantly different in 2016 compared to 1998. Specifically, whereas highly educated grandparents were less likely to have daily face-to-face contacts with grandchildren in 1998 compared to those with lower levels of education (AMEs -0.059 , $p < 0.01$), no differences were found in 2016 suggesting that educational attainments have become less important in determining frequency of contacts with grandchildren (see also Fig. 2, panel a in the Appendix). In addition, we found that living within 1 KM was more relevant in determining daily contacts with grandchildren in 1998 (Fig. 2, panel c in the Appendix).

Provision of grandparental childcare

Findings for grandparental childcare provision are shown in Table 4, which lists AMEs, and robust standard errors drawn from multinomial predicted probabilities. While grandmothers were, overall, more likely to provide grandchildren care when parents work, older grandparents were less likely to provide so. Findings were significant for 1998, 2003 and 2009. However, these differences were not confirmed for caregiving during holidays. Grandparents living in the South were significantly less likely to provide intensive care to grandchildren (i.e., when parents work) in all the considered time periods. The probability to provide care when parents work (vs providing it occasionally) was significantly lower for higher educated respondents in 1998. However, this association has decreased its magnitude and its statistical power over time ($p > 0.1$), becoming positive in 2009 and in 2016 ($p > 0.1$). Grandparents who were active in the job market were also less likely to provide care when parents work, although the association changed sign and lost power in 2016 ($p > 0.1$). Number of grandchildren was negatively associated with care while living close to them increased respondent's probability to provide grandchild care when parents work.

With regard to holidays caregivers, widowed grandparents were about 2 to 3 percentage points less likely to provide grandchild care during holidays in 1998 and in 2003. However, while union dissolution was negatively associated with grandchild care during holidays in 1998, separated or divorced grandparents were about 4 percentage points more likely to provide grandchild(ren) care during holidays in 2003. In addition, our findings suggest that higher educated grandparents were more likely to provide care during holidays in 2016 (AMEs = 0.028, $p < 0.1$). Grandparents living in the South were more likely to provide care during holidays in 2003 (AMEs = 0.064; $p < 0.01$), in 2009 (AMEs = 0.039; $p < 0.01$) and in 2016 (AMEs = 0.047; $p < 0.01$). Finally, respondents living within 1 km from their grandchild(ren) were between 30 to 42 percentage points less likely to provide care during holidays.

In terms of changes of associations between socio-demographic factors and grandchild caregiving during holidays, we observe a variation in its association with education ($p < 0.01$), being widow and divorced/never married ($p < 0.1$) and living in Central Italy ($p < 0.01$) over the last 20 years (Fig. 3 in the Appendix). With regard to grandchild caregiving when parents work, over the last 20 years, education, working status and having own income were more relevant in 2016 compared with 1998 (Fig. 4 in the Appendix).

As a robustness check, we have replicated all analyses on a sub-sample consisting of grandparents aged 60+. Results (available upon request) are consistent with those provided by the main analyses.

Table 5 summarises the main findings by, respectively, listing changes in the grandparents' characteristics over time (i.e., changes in the structure—RQ1) and changes in the association between grandparents' characteristics and grandparent–grandchild interactions (i.e., changes in the association—RQ2). More specifically, in the table we report the directions (↑: increase; ↓: decrease of the effects in 2016 compared to 1998) and the statistical significance of changes between 1998 and 2016.

Conclusions and discussion

This study has assessed changes in grandparent–grandchildren relationships over two decades in Italy. More specifically, we have examined the trend over time of coresidence, face-to-face contacts and grandparental childcare as well as their (change in the) association with individual socio-economic and demographic factors.

Overall, despite the socio-demographic changes observed among grandparents between 1998 and 2016 (with grandparents becoming older, having fewer grandchildren and more of them living farther away, and higher levels of education), their involvement in their grandchildren's life has changed little. Empirical findings have shown that exchanges between grandparents and grandchildren remained broadly stable over the 20 years considered, with a slight decrease in daily face-to-face contacts and a slight increase in the proportion of grandparents providing grandchild care. The finding related to face-to-face contacts, however, should be considered in light of increases in the use of alternative means of communication (see Arpino et al., 2021). For instance, in the 2016 survey—the only one to include questions on contacts by modern technology, such as video calls—we found that 2.15% of grandparents had daily digital communication with their grandchildren and 3% at least weekly. These proportions rise to 4.3% and 8.8%, respectively, when grandparents live more than 16 km away, suggesting that when the possibility of face-to-face contacts are limited by distance (or for example when mobility is restricted as during the recent COVID pandemic), grandparents may use other means of communication to keep in regular contact with their grandchildren.

Previous studies on socio-demographic changes that occurred in recent decades among older people and their theoretical importance in shaping intergenerational relationships, have found relatively stable exchanges (Kalmijn & De Vries, 2009; Steinbach et al., 2020; Treas & Guberskaya, 2012), and strong resilience in relationships between older parents and their adult children measured using frequency of contacts, rating of affections, or reciprocity. Using the German Ageing Study, Steinbach et al. (2020) explained this stability hypothesising that “family members appear to react to variations in social and economic circumstances with behavioural changes allowing them to maintain high levels of overall intergenerational solidarity (p.904)”. Using data from the International Social Survey Programme, both Kalmijn and De Vries (2009) and Treas and Guberskaya (2012) also found that changes in population composition played a marginal role on changes in intergenerational exchanges, and that overall there was no evidence that adult children's contact with mothers had become less frequent over time. These results, mainly involving G1–G2 exchanges, seem to hold when G1–G3 exchanges are considered as in this work.

Table 5 Visual summary of main results (RQ1 and RQ2)

Variables	Change in the structure (1998 vs 2016)	Change in the association (1998 vs 2016)		
		Coreidence with at least 1 grandchild	Contacts with at least 1 grandchild	Grandchild caregiving
		Yes	Daily	Holidays Parents work
Coreidence with at least 1 grandchild				
Contacts with at least 1 grandchild	***			
Grandchild caregiving				
Never	***			
Parents work	***			
Occasional	***			
Holidays				
Women				
Age class				
< 49				
50–59 (ref.)	***			
60–74	***	↓ ***		
75 +	***	↓ ***		
Education				
High school diploma	***		↑ ***	↓ *** ↑ ***
Marital status				
Married (ref.)	***			
Widow	***	↓ ***		↓ *
Divorced/separated/Never married	***	↓ **		↑ *
Number of grandchildren (Mean; SD)	***	↓ ***		
Macro-region of residence				
North (ref.)				
Centre	***			↓ ***
South	**			
Working status				
At work	*			
Other	***			↑ ***
Retired (ref.)	***			
Own income				↑ ***
Yes				
Chronic disease	***			
Living proximity				
< 1 KM (included coreidence)	***			
Between 1 to 16 KM	***		↓ **	
> 16 KM (ref.)	***			

↓ if in 2016 the predicted value is lower than in 1998

↑ if in 2016 the predicted value is higher than in 1998

p* < 0.1; *p* < 0.05; ****p* < 0.01

Our study confirms how intergenerational family relations have been characterised by stability rather than change, and that few changes were mostly driven by behavioural rather than compositional changes in the population (e.g., Steinbach et al., 2020). In addition, in our study we found that most characteristics have remained almost stable predictors of intergenerational exchanges over time, with few exceptions. For instance, when contacts were considered, divorced/separated/never married grandparents and those living far away from their grandchildren were less likely to have daily contacts with them, across all time-points. In Italy, to date, the (small) rise in divorce which has generally been associated with weaker grandparent–grandchild relationships, especially on the paternal side (Westphal et al., 2015), has not yet adversely impacted intergenerational relationships between grandparents and grandchildren. However, older grandparents are generally less likely to have daily face-to-face contacts with their grandchildren and have become less likely to coreside with them. Therefore, it is likely that as older people move to grandparenthood later in life (Di Gessa et al., 2020a) there will be an impact on co-residence and face-to-face contacts. Moreover, the negative associations between higher educational attainment and both daily contacts with grandchildren and intensive grandchild care provision lost their statistical power over time, with even a positive sign in 2016. Thus, we could expect that the increase in grandparents' level of education will not affect their relations with grandchildren in the future. In addition, the lower number of grandchildren experienced by the new cohorts of older people may facilitate intensive intergenerational exchanges.

This study draws strength from using data from nationally representative data of high quality and good response rates. It also explored a variety of currencies of exchanges over time among grandparents and grandchildren in Italy. Moreover, we investigated changes in the associations between socio-demographic factors and intergenerational exchanges in an attempt to understand whether and to what extent societal changes are a driving force of these observed trends. Our contribution, however, should be considered in light of some limitations. By design, it is not possible to link grandchildren to their parent's socio-demographic characteristics: therefore, we could not account for important confounders, such as parents' employment or marital status. Furthermore, no information on formal childcare availability and/or use is collected and, as mentioned above, questions on communications by modern technologies were included only in the most recent survey. As the number of foreign-born grandparents is increasing in Italy, further studies should investigate changes in this subgroup and between Italian and non-Italian grandparents. Finally, some measures, particularly the health indicator, required adaptation, whereas others (such as wealth or home tenure) were not collected across all four surveys and could not be used in our analysis.

In conclusion, despite important demographic and societal changes among Italian grandparents in the first two decades of the twenty-first century, grandparents continue to show generally a very high and resilient level of interactions with their grandchildren, with little evidence to support potential concerns of a decline in intergenerational exchanges.

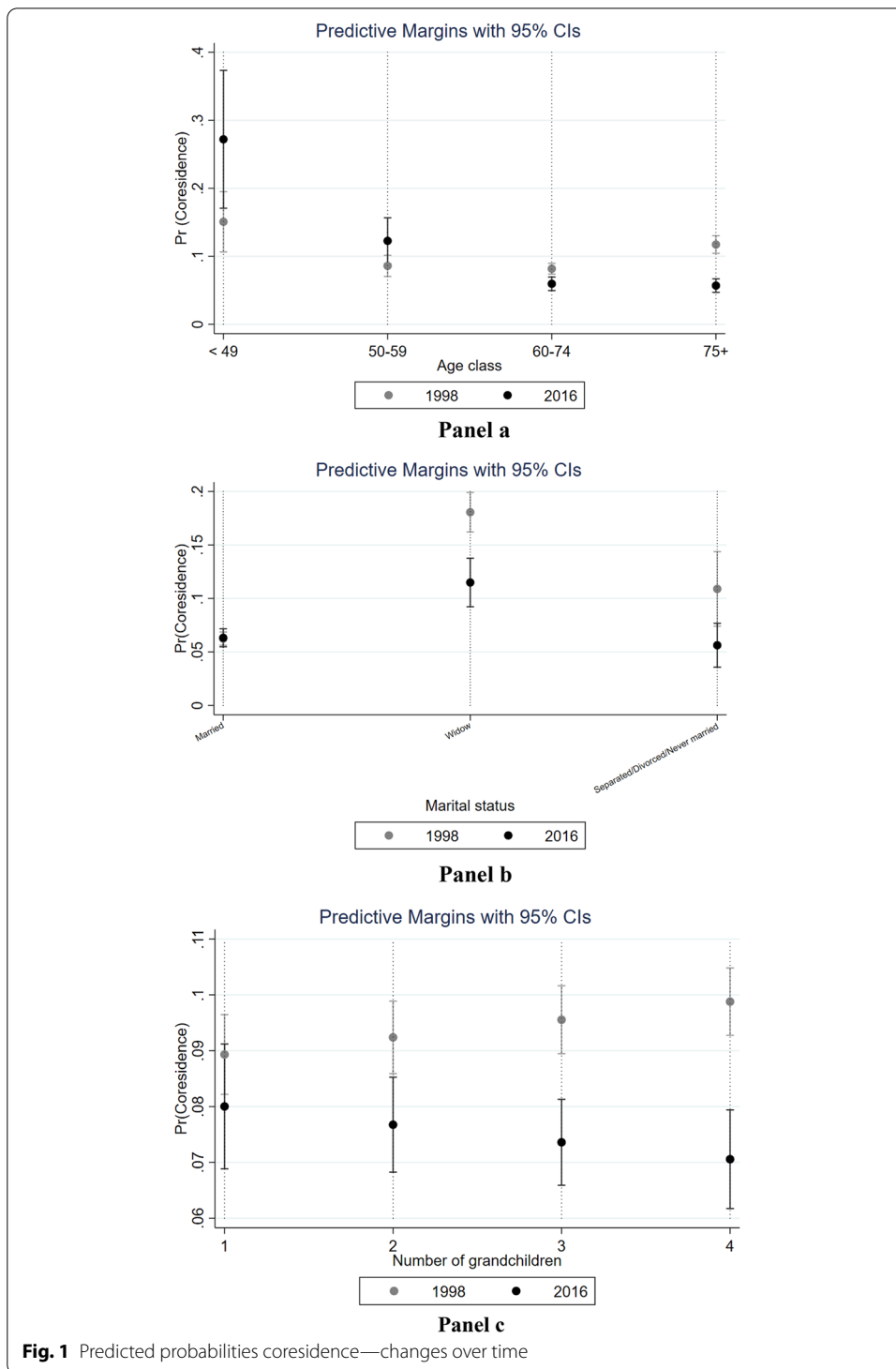
Appendix

See Table 6 and Figs. 1, 2, 3 and 4.

Table 6 Weighted descriptive characteristics of respondents with grandchildren younger than 13 years by year

<i>N</i>	1998 5451	2003 5789	2009 5199	2016 2995
Coreidence with at least 1 grandchild	3.14	2.61	2.68	2.83
Contacts with at least 1 grandchild				
Daily	52.37	49.63	47.68	44.81
Grandchild caregiving				
Never	21.58	22.20	17.64	17.94
Parents work	29.50	33.39	34.48	39.29
Occasional	39.75	35.98	37.74	34.08
Holidays	9.17	8.42	10.13	8.67
Women	57.38	56.34	57.15	55.43
Age class				
< 49	3.55	2.99	2.79	2.37
50–59 (ref.)	25.95	23.65	20.68	19.35
60–74	61.71	61.61	60.43	63.94
75+	8.79	11.75	16.11	14.34
Marital status				
Married	79.90	80.07	79.43	78.73
Widow	17.90	15.88	15.10	13.23
Divorced/separated/never married	2.81	4.05	5.47	8.04
Macro-region of residence				
North	43.88	45.66	45.40	45.13
Centre	19.85	19.48	19.80	19.77
South	36.27	34.87	34.79	35.10
Education				
High school diploma	10.69	12.84	17.20	28.42
Working status				
At work	14.41	15.33	14.50	16.97
Other	50.95	54.12	52.06	54.01
Retired	34.64	30.55	33.44	29.02
Own income				
Yes	79.76	80.64	80.20	81.15
Chronic disease	10.37	9.86	8.96	5.96
Number of grandchildren (Mean; SD)	3.03 (2.45)	2.90 (2.13)	2.83 (2.01)	2.54 (1.55)
Living proximity				
< 1 km (included coresidence)	49.52	48.89	43.55	39.67
Between 1 to 16 km	37.35	37.12	39.05	40.00
> 16 km	13.13	13.99	17.39	20.33

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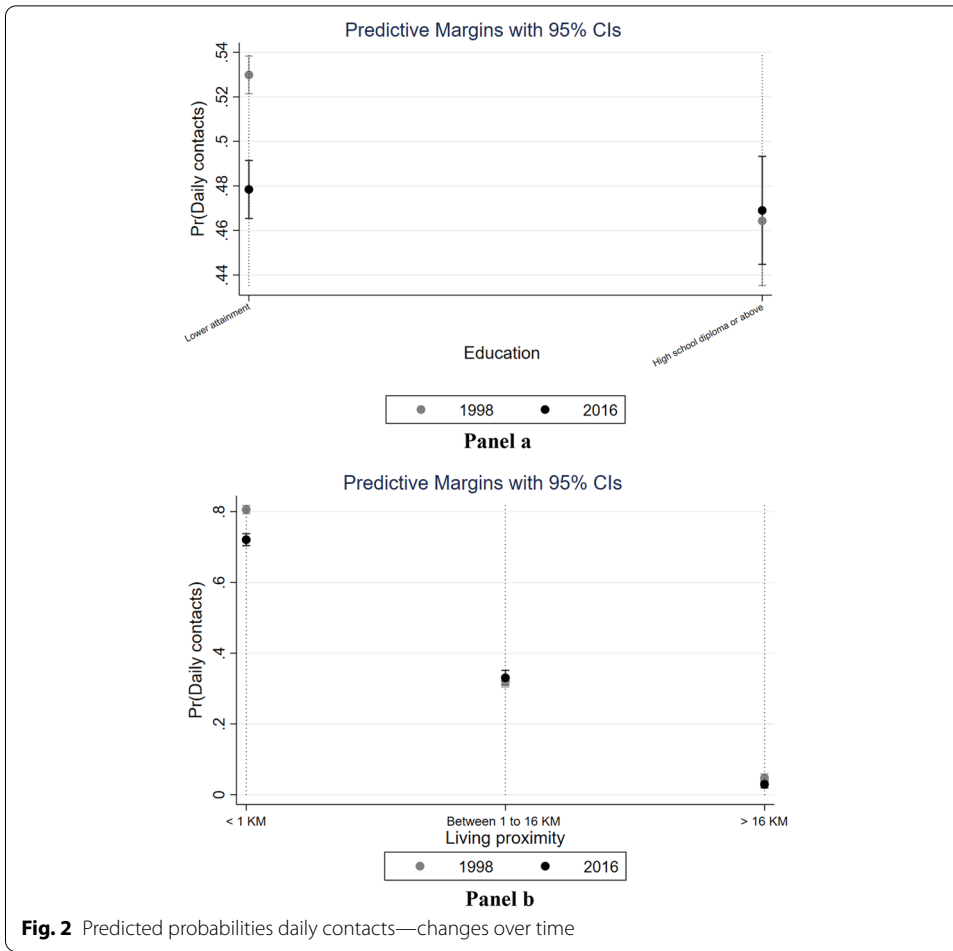
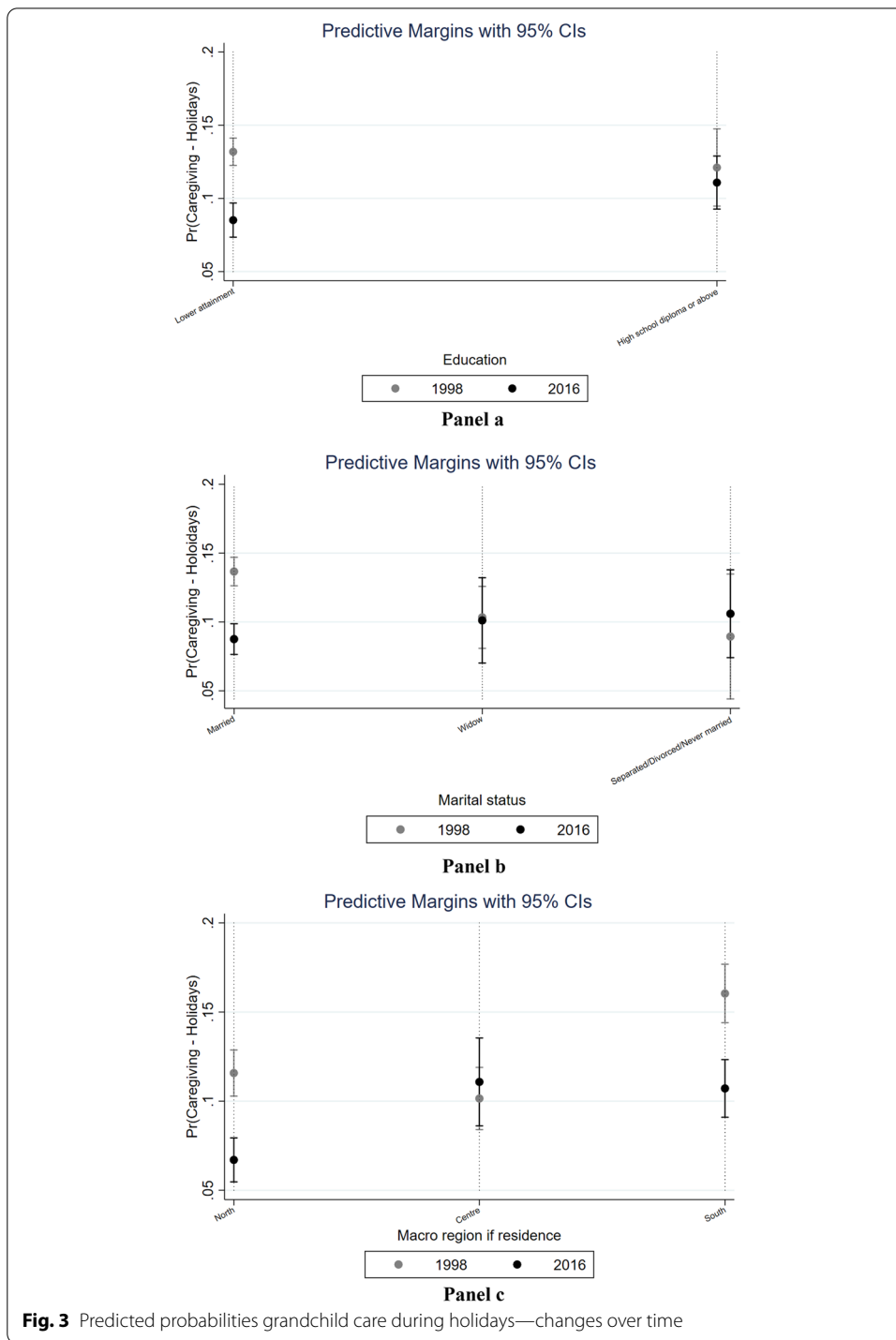
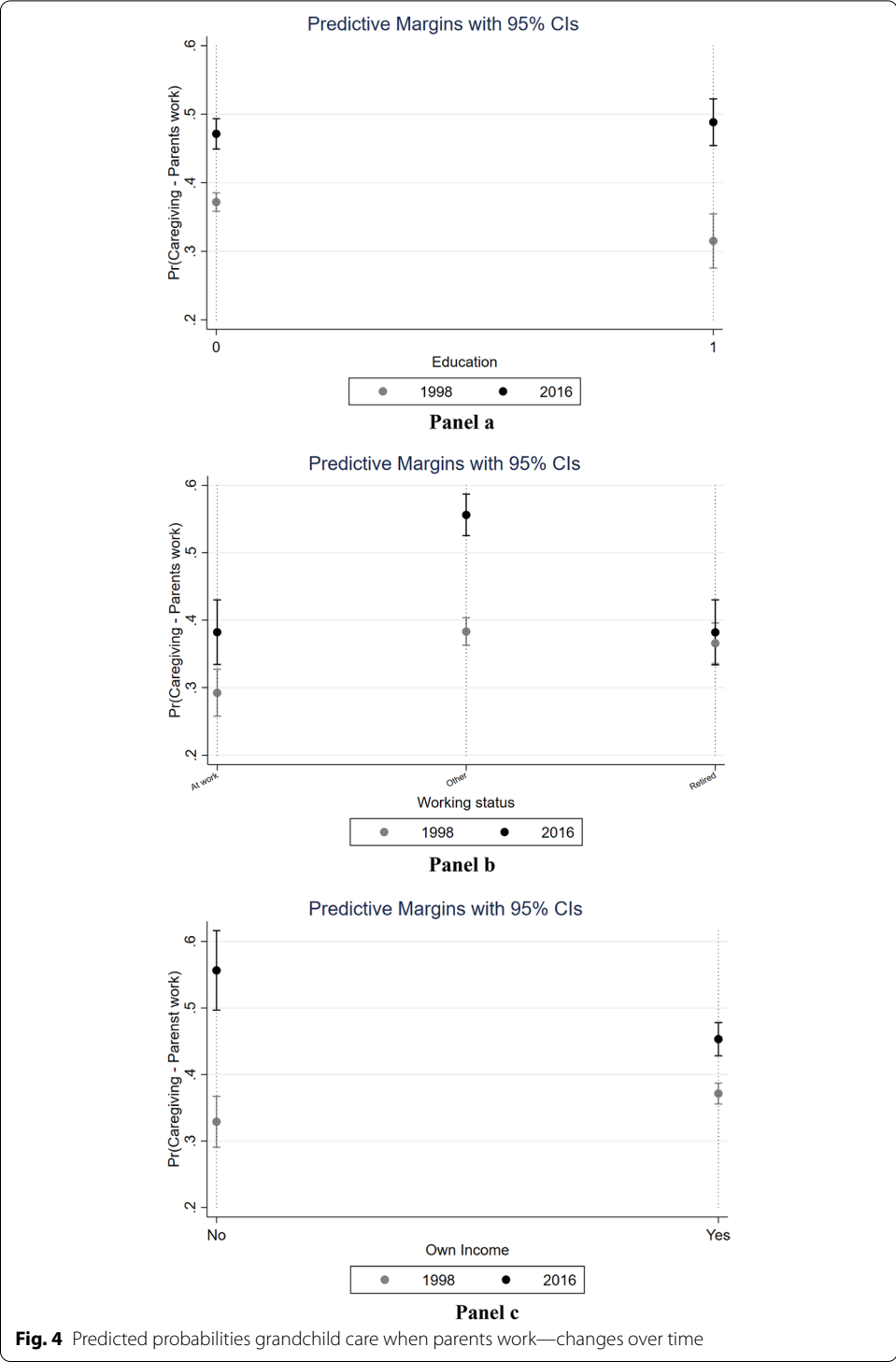


Fig. 2 Predicted probabilities daily contacts—changes over time





Acknowledgements

The authors wish to thank the participants in the Sixth South Tyrol Workshop on Intergenerational Relationships, organized by the Grandparenting in Europe network on 7 September 2021 (on-line), for the relevant comments.

Authors' contributions

All authors read and approved the final manuscript. The authors confirm that the content of the manuscript has not been published or submitted for publication elsewhere.

Funding

None.

Availability of data and materials

Available upon request.

Declarations**Competing interests**

The authors declare that they have no competing interests.

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Received: 23 July 2021 Accepted: 5 November 2021

Published online: 27 November 2021

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