Family and Non-Family Ties and Depressive Feelings During the COVID-19 Pandemic. Evidence from the Survey Of Health, Ageing and Retirement in Europe (SHARE)

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Short abstract

This study aims at investigating the association between family and non-family ties and changes in depression during the COVID-19 outbreak in a sample of individuals aged 50 and above living in 26 European countries. The analysis is based on data from the Survey of Health, Ageing and Retirement in Europe (SHARE), including the SHARE COVID-19 Survey fielded in the summer of 2020. The study sample numbered 31,821 individuals aged 50 and older in 26 European countries. We apply multinomial logistic regression models to estimate the probability of being more depressed, less depressed, or about the same since the COVID-19 outbreak. The main independent variable is the Social network (SN) relationship composition, which distinguishes between SN composed by: (a) only family members; (b) only non-family members; (c) both family and non-family members; and (d) "empty" social networks. Our preliminary results indicate a lower probability of being more depressed for individuals belonging to the SN consisting exclusively of family members and for those with an "empty" SN. However, this last group showed also a higher probability of being depressed at the same pre-pandemic level. We did find gender differences in the links between SN and being more depressed since the COVID-19 outbreak. This study could advance the understanding of how family and non-family social network ties can influence mental health during COVID-19 pandemic.

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1. Introduction

Family and non-family ties are important determinants of health and well-being (Cohen and Wills 1985; Smith and Christakis 2008; Thoits 1982), particularly during the COVID-19 pandemic (Patterson, Margolis, and Verdery 2020; Stokes and Patterson 2020), a period characterised by marked mental health risks worldwide (Chandola et al. 2020; Creese et al. 2021). While most studies focus exclusively on family ties, the mental health consequences of the COVID-19 crisis differ considerably across social groups and the role of non-family ties (e.g. friends, colleagues, etc.) remains understudied (Arpino and Pasqualini 2021; Patterson et al. 2020). This study aims to investigate this heterogeneity by analysing whether and to what extent pre-pandemic family and non-family ties affect depressive symptoms among older Europeans during the first outbreak of the COVID-19 pandemic. The originality of this study is the distinction between family and non-family ties, their intersectionality with gender, and their impact on changes in depressive feelings.

At the theoretical level, social networks influence mental health through two main channels. First, there is the direct effect: companionship, emotional closeness, and support availability constitute resources that may positively affect mental health (Smith and Christakis 2008). Second, according to the "buffering hypothesis", social relationships may reduce the stress associated with difficult events, protecting mental health indirectly (Cohen and Wills 1985; Thoits 1982). The COVID-19 pandemic represents such a disruptive and destructive global event. The causal link is plausibly two-directional, but there is evidence suggesting that changes in networks protect (or harm) the mental health of older adults and not vice versa (Bordone and Arpino 2019; Mosca and Barrett 2016).

Family networks are assumed to differ from non-family networks. First, they are related to different types of activities and have different emotional consequences: whereas older adults tend to spend time with their spouses and children for routine daily activities, leisure activities are often accompanied by friends, leading to higher positive affect and arousal (Chui et al. 2014). Second, in general, people rely more on the support of family members than on non-family informal networks (Conkova, Fokkema, and Dykstra 2018; Fihel, Kalbarczyk, and Nicińska 2021). Family and non-family ties are also related to different types of activities and this may have different emotional consequences. Chui et al. (2014), on the base of 74 oldest-old, showed that older adults tend to spend time with their spouses and children for routine daily activities, leisure activities are often accompanied by friends, leading to higher positive affect and arousal. According to Merz and Huxhold (2010), emotional support from the family network is positively associated with the wellbeing of older adults, but not emotional support from the non-family network. Empirical evidence shows that both family and non-family social networks correlate with better mental health. Socially engaged older adults (Glass et al. 2006), those living in more cohesive neighbourhoods (Ruiz et al. 2019; Stafford, Mcmunn, and Vogli 2011), those having larger and more supportive networks (Vink, Aartsen, and Schoevers 2008), and those staying in frequent contact with own children had a consistently lower risk of experiencing depressive symptoms (Tosi and Grundy 2019).

Gender is expected to modify the association between social networks and health. Women have larger and more diverse meaningful social networks than men (Antonucci, Akiyama, and Lansford 1998). In addition, women more than men are traditionally socialized into (family) caregiving roles and family responsibilities might be put under pressure during the COVID19 pandemic. This suggests that if women more than men are embedded in larger and more diverse social networks, older women should experience more than men an increase in depressive feelings during periods characterized by a reduction and a familization of social networks, such as the COVID-19 pandemic.

Whereas most people experienced few symptoms of mental health deterioration during the COVID-19 pandemic (Saunders et al. 2021), for some groups – such as those with low perceived social support in their social networks – mental health worsened to a greater extent (Arpino and Pasqualini 2021; Sommerlad et al. 2021). In addition, there are well-documented gender differences therein (Arpino and Pasqualini 2021). During COVID-19, feeling close to one's friends (but not feeling close to one's family) was shown to protect the well-being of older adults (Cavallini et al. 2021). However, more sociable people were shown to experience greater increases in anxiety and depressive symptoms during the pandemic (Saunders et al. 2021; Sommerlad et al. 2021). Moreover, the pandemic affected non-family networks differently than it affected family networks. Non-family contacts, especially work- and community-based, were substantially reduced during the COVID-19 pandemic (Liu et al. 2021). In addition, whereas virtual contacts with family members largely replaced the lost contacts in person (Furfaro et al. 2021), such change was more difficult for contacts with non-kin (Cohn-Schwartz, Vitman-Schorr, and Khalaila 2021). However, the buffering effect of family and non-family ties during the pandemic is still understudied.

Our theoretical expectation is that family ties should be more effective than non-family ties in protecting the mental health of older adults during the COVID-19 pandemic, because they were better sustained during the period of contact restrictions imposed by the governments, and because they were a more reliable source of instrumental support. In addition, we expect older women to experience more than men an increase in depressive feelings due to a reduction and a familization of social networks.

2. Data and methods

The study uses data from the Survey of Health, Ageing and Retirement in Europe (SHARE). Shortly after the outbreak of the Covid-19 pandemic, SHARE instituted a computer-assisted telephone interview (CATI) among all its panel respondents to capture the first consequences of the pandemic (Scherpenzeel et al. 2020). After excluding observations with missing information on any of the variables of interest (545 observations, 1.68%), the analytical sample consisted of 31,821 respondents (13,297 men and 18,524 women) of age 50 and older living in 25 European countries. Sample characteristics are reported in Table 1.

The outcome variable is a self-reported measure of changes in feelings of depression based on the following question: "*In the last month, have you been sad or depressed?*" In the event of a positive answer, respondents are asked to judge if the problem was "*More so*", "*Less so*" or "*About the same*" as before the outbreak of COVID-19. A categorical variable is therefore created, where 0 = "Not depressed", 1 = "More so", 2 = "Less so", 3 = "About the same". This variable allowed us to measure depression changes in the absence of a (comparable) pre-pandemic measure of mental health.

Social network (SN) relationship composition is the key explanatory variable and it is based on the following question: "*Over the last 12 months, who are the people with whom you most often discussed important things?*". This question focuses the respondents to consider their confidants, meaningful people with whom they interact, discuss things of relative importance, and maintain a degree of trust. SHARE respondents can provide a list of names, up to seven, and they are encouraged to consider and list not only family members but also important persons in their lives, such as friends, neighbours or other acquaintances. Our variable of SN composition is operationalized into four categories: **1)** "*Mixed*" (i.e., SN composed by family and non-family members); **2)** "*Only non-family members*" (i.e., SN composed exclusively by friends, formal helpers – such as professional caregivers – or other persons); **3)** "*Only family members*" (i.e., SN composed exclusively by Spouses/Partners, Parents, Parents-in-law, Step-parents, Siblings, Children, Step-children, Children-in-law, Grandchildren, Grandparents,

Aunts, Uncles, Nieces, Nephews, or other relatives); **4)** "*Empty network*" (i.e., respondents did not indicate any persons).

Control variables include gender, age categories, presence of a partner in the household, living in a single-person household, level of education, current job situation, number of chronic diseases, number of mobility limitations, number of limitations with activities of daily living (ADL) and instrumental activities of daily living (IADL); and country of residence.

Multinomial logistic regression models are used to estimate the probability of being more depressed, less depressed, or about the same. As the multinomial coefficients are not immediately interpretable, the Average Marginal Effects (AMEs) and the predicted probabilities of the three outcomes are reported. The probabilities are obtained by conditioning on the predictors of interest while keeping the others constant at the overall mean.

3.   Preliminary results

Figure 1 shows the estimates of a multinomial logistic regression model. Preliminary results indicate that individuals with empty social networks (SN), or SN composed exclusively by family members are less likely of being more depressed since the outbreak of COVID-19. More specifically, as compared with the "Mixed" SN group, individuals with only family members in their SN display lower chances (roughly 2 percentage points less) of being more depressed (Figure 1, AME = -.0201; 95% CIs: -.0297, -.0105; $p < 0.001$). Similarly, individuals with empty SN showed lower changes of being more depressed (Figure 1, AME = -.0348; 95% CIs: -.0563, -.0132; $p < 0.01$). In addition, this last group of respondents (i.e, "Empty Network") show higher chances (about 3.5 percentage points more) of being depressed "about the same" since the COVID-19 outbreak (Figure 1, AME = -.0348; 95% CIs: -.0563, -.0132; $p < 0.01$).

Figure 2 shows the predicted probabilities of being more depressed from a multinomial logistic regression model including an interaction term between gender and SN type. Results indicate that the risks of being more depressed since the outbreak are higher among women than among men. The only exception to this pattern regards the group of individuals belonging to the SN type "Empty network".

4.   Concluding remarks

There are some insights, from these preliminary analyses, that may support the hypothesis that social networks can play a fundamental role in shaping mental health conditions during major crises – such as the COVID-19 pandemic – especially among women.

In line with previous studies (Saunders et al. 2021; Sommerlad et al. 2021), our preliminary results suggest that older adults with only family members in their pre-pandemic network of meaningful people are better protected from an increase in depressive feeling than those with a pre-pandemic "mixed" network (i.e., composed by family and non-family ties). We also observed that older adults with a non-family network are characterized by greater variability in their response, and their increase in depressive feeling does not statistically differ from older people with a family network or a mixed network. Surprisingly, older adults with a pre-pandemic empty network are the ones who are less at risk of an increase of depressive feeling. Indeed, their level of depression is likely to be already high in the pre-pandemic period and the COVID19 pandemic does not improve or deteriorate their social situation.

The above-mentioned patterns of associations between family and non-family ties with mental well-being were more prominent among women. Literature suggests that women have larger and more diverse meaningful social networks than men (Antonucci, Akiyama, and Lansford 1998). If women are embedded in larger and more diverse networks, this could be

the reason why older women experienced more than men an increase in depressive feeling during the first outbreak of COVID-19, a period characterized by a reduction and a familization of social networks.
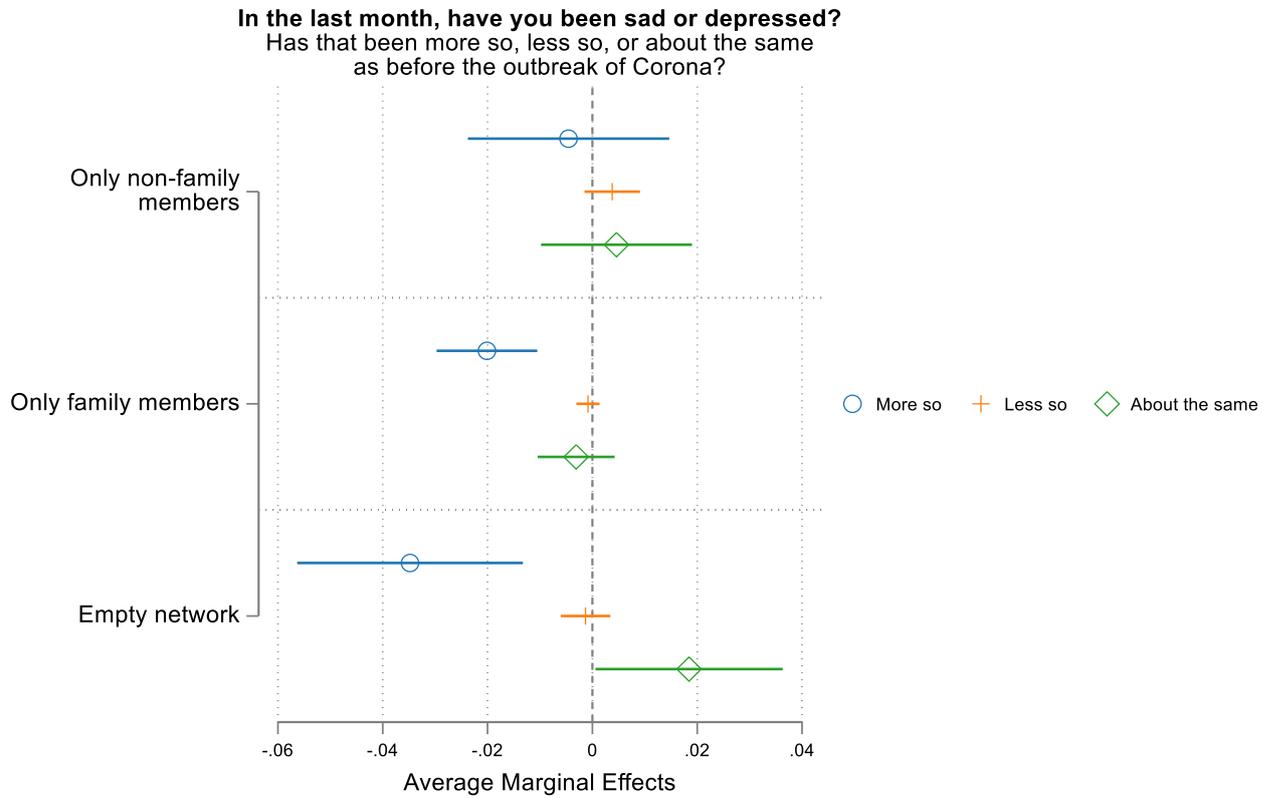
As for the next steps of the analysis, we plan to better identify and examine the generative mechanisms linking (non-)family ties to changes in mental well-being. First, we plan to account for family situation, living arrangements, and the kinds and frequency of contacts with family and non-family ties from outside the household (since the COVID-19 outbreak) as potential moderating factors. Second, recognizing the reliance of older adults on their adult children, we plan to provide a more fine-grained analysis distinguishing between close family members (e.g., adult children, parents, partners, etc.) and other family ties (siblings, other relatives, etc.). Moreover, recognizing the gendered nature of depressive feelings, social networks, and family responsibilities, we plan to better investigate gender differences in the described patterns.

Appendix

Table 1. Descriptive statistics of variables in the analyses.

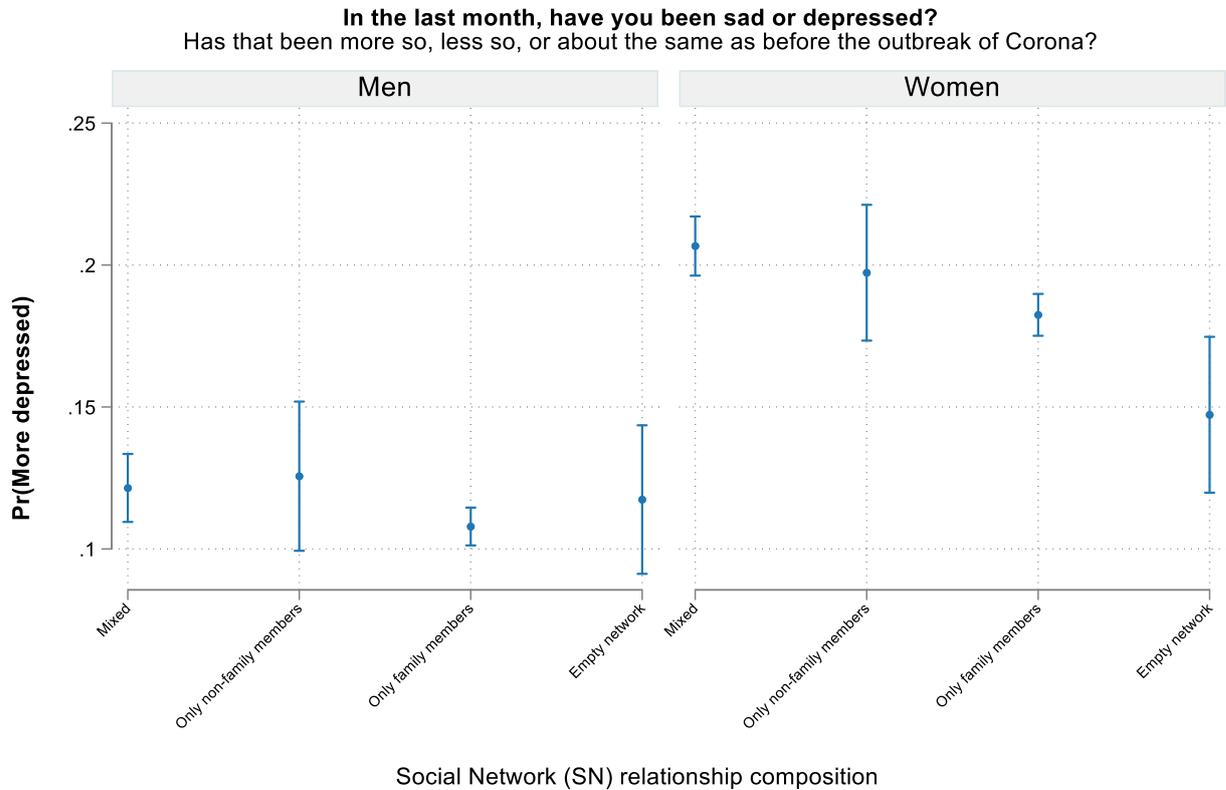|		N	% (mean)	SD	Min.	Max.
Depression	Not depressed	23830	74.89	74.89		
	More so	5029	15.80	15.80		
	Less so	194	0.61	0.61		
	About the same	2768	8.70	8.70		
Social Network type	Mixed	9319	29.29	29.29		
	Only non-family members	1631	5.13	5.13		
	Only family members	19808	62.25	62.25		
	Empty network	1063	3.34	3.34		
Gender	Men	13297	41.79	41.79		
	Women	18524	58.21	58.21		
Age category	50-59	4231	13.30	13.30		
	60-69	11758	36.95	36.95		
	70-79	10473	32.91	32.91		
	80+	5359	16.84	16.84		
Living with partner	No	9916	31.16	31.16		
	Yes	21905	68.84	68.84		
Living alone	No	23983	75.37	75.37		
	Yes	7838	24.63	24.63		
Level of education	Low	10636	33.42	33.42		
	Mid	13928	43.77	43.77		
	High	7257	22.81	22.81		
Current job situation	Retired	21982	69.08	69.08		
	Employed or	5776	18.15	18.15		
	Unemployed	532	1.67	1.67		
	Permanently	773	2.43	2.43		
	Homemaker	2295	7.21	7.21		
	Other	463	1.46	1.46		
Number of chronic diseases		31,821	1.96	1.63	0	12
Number of mobility limitaions		31,821	1.77	2.43	0	10
Number of ADL		31,821	0.25	0.89	0	6
Number of IADL		31,821	0.54	1.54	0	9
Country	Germany	2347	7.38	7.38		
	Sweden	1044	3.28	3.28		
	Spain	1019	3.20	3.20		
	Italy	1862	5.85	5.85		
	France	1651	5.19	5.19		
	Denmark	1424	4.48	4.48		
	Greece	1878	5.90	5.90		
	Switzerland	1597	5.02	5.02		
	Belgium	1624	5.10	5.10		
	Israel	664	2.09	2.09		
	Czech Republic	1967	6.18	6.18		
	Poland	1646	5.17	5.17		
	Luxembourg	665	2.09	2.09		
	Hungary	449	1.41	1.41		
	Slovenia	2005	6.30	6.30		
	Estonia	2613	8.21	8.21		
	Croatia	1063	3.34	3.34		
	Lithuania	1063	3.34	3.34		
	Bulgaria	665	2.09	2.09		
	Cyprus	364	1.14	1.14		
	Finland	990	3.11	3.11		
	Latvia	632	1.99	1.99		
	Malta	636	2.00	2.00		
	Romania	1110	3.49	3.49		
	Slovakia	843	2.65	2.65		

Figure 1. Average Marginal Effects (AMEs) with 95% confidence intervals for the chances of being more depressed, less depressed, or about the same (versus "non-depressed") since the COVID-19 outbreak. Estimates refer to different Social Network (SN) types, holding the "Mixed" (i.e., SN composed by family and non-family members) as the reference category.

In the last month, have you been sad or depressed?
Has that been more so, less so, or about the same
as before the outbreak of Corona?

Source: SHARE data (summer 2020). Own estimates.
Note: Regression models include all the control variables (gender, age categories, presence of a partner in the household, living in single-person household, level of education, current job situation, number of chronic diseases, number of mobility limitations, number of limitations with ADL and IADL, and country of residence).

Figure 2. Predicted probabilities with 95% confidence intervals for the chances of being more depressed, less depressed, or about the same (versus "non-depressed") since the COVID-19 outbreak. Estimates refer to a regression model including an interaction between gender and different Social Network (SN) types.

In the last month, have you been sad or depressed?
Has that been more so, less so, or about the same as before the outbreak of Corona?

Social Network (SN) relationship composition

Source: SHARE data (summer 2020). Own estimates.
Note: Regression models include all the control variables (gender, age categories, presence of a partner in the household, living in single-person household, level of education, current job situation, number of chronic diseases, number of mobility limitations, number of limitations with ADL and IADL, and country of residence).

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