

# Social Network Typologies and Health Transitions in Later Life: Exploring the Multidimensional Nature of Social Ties

*Federica Prete<sup>1,2</sup>, Eleonora Trappolini<sup>2</sup>*

<sup>1</sup> University of Florence, <sup>2</sup> Sapienza University of Rome

Corresponding author: federica.prete@unifi.it

*Extended abstract – Work in progress*

**Keywords:** social networks, intergenerational relations, ageing, health transitions, SHARE

## *Introduction*

Population ageing is profoundly reshaping intergenerational relationships in Europe, challenging the familistic model that has long sustained exchanges in later life. Declining fertility rates, increasing longevity, and the evolution of family structures are reducing the availability of kin-based help and raising the question of which ties – kin and non-kin – sustain older adults' health. Previous research has shown that non-family ties (friends, neighbours, community) are voluntary, reciprocal, and emotionally meaningful, and may complement or substitute family support when it is scarce or absent (Barker, 2002; Huxhold et al., 2014; Ng et al., 2021; Fihel et al., 2022).

This study aims to answer two questions: "What types of family and non-family networks can be identified among older Europeans based on their structure, function, and quality? And how are these social network types associated with health status changes in later life?" By adopting a multidimensional perspective that integrates different indicators, the purpose of the research is to address the gap in the literature on kin and non-kin effects and to identify typologies of social connectedness linked to late-life well-being (Fiori et al., 2007; Cohn-Schwartz et al., 2021; Ellwardt et al., 2017; Rafnsson et al., 2015).

## *Theoretical Framework*

Research on older adults' social networks is mainly guided by two theoretical perspectives. The Social Convoy Model describes relationships as a dynamic convoy that adapts to life-course changes and tends to become more kin-oriented with age (Kahn & Antonucci, 1980; Antonucci et al., 2014). Socioemotional Selectivity Theory (Carstensen et al., 2003; Charles & Carstensen, 2010) suggests that as people perceive time as limited, they prioritise emotionally meaningful relationships and reduce peripheral ones. However, recent studies challenge the idea that non-kin ties lose importance in later life. Friendships and community involvement remain strongly linked

to higher well-being, lower depressive symptoms, and better cognitive functioning (Huxhold et al., 2014; Ng et al., 2021; Cohn-Schwartz et al., 2021; Rafnsson et al., 2015).

Studies using network typologies show that older adults embedded in diverse or multi-tie networks tend to experience better mental and cognitive outcomes, while network size alone is not sufficient to explain health trajectories without taking into account function and quality (Fiori et al., 2006; Fiori et al., 2007; Litwin, 2010; Ellwardt et al., 2017). Gender differences also matters: women tend to maintain broader and more bridging networks, while men's networks are typically smaller and more kin-centric (Cornwell, 2011; Krause, 2010; Djundeva et al., 2019).

Based on this literature, we expect health improvements to be more likely among older adults embedded in diverse, supportive, and satisfying networks, whereas restricted or kin-only configurations are expected to be associated with poorer or declining health (Fiori et al., 2007; Cohn-Schwartz et al., 2021).

### *Data and Methods*

The analysis draws on data from the Survey of Health, Ageing and Retirement in Europe (SHARE), waves 6 (2015) and 9 (2021), and includes 12,990 respondents aged 65 and older with valid observations across both waves (mean age: 71.7 years; 56% women).

Social networks were derived using indicators of:

- Structure: social network size, presence of partner, number of children, of other relatives, and of non-family members in the personal network;
- Function: frequency of contact with family and non family-members and receipt of instrumental support;
- Quality: satisfaction with personal relationships.

These dimensions reflect the multidimensional nature of older adults' social ties (Fiori et al., 2007; Litwin et al., 2020) and were used jointly to derive network typologies through a Latent Class Analysis that tested model with 2 to 7 classes. Model selection relied on a combination of fit indices (BIC, AIC, entropy), classification quality (AMPP, error rate), and the Bootstrap Likelihood Ratio Test (BLRT), following the guidelines of Nylund, Asparouhov, and Muthén (2007).

The resulting network types are: 1) Family-rich – Supported – Satisfied (24.48%), 2) Family-restricted – Unsupported – Satisfied (23.34%), 3) Partner-only – Unsupported –

Satisfied (14.43%), 4) Diverse – Supported – Moderately satisfied (14.82%), 5) Multi-tie – Supported – Satisfied (16.97%), 6) Non-kin-focused – Unsupported – Unsatisfied (5.96%).

Gender differences are pronounced: women are overrepresented in diverse (66%) and multi-tie (66%) networks, whereas men prevail in partner-only (69%) and family-restricted (42%) types. Educational patterns also emerge: highly educated respondents are more frequent in multi-tie (36%) and diverse (27%) networks, while low-educated individuals concentrate in family-restricted (42%) and family-rich (37%) configurations.

Health changes between wave 6 and wave 9 were measured for four outcomes: self-rated health (SRH), mental health (EURO-D scale), functional limitation (GALI), and physical performance (grip strength). Each outcome was recoded into three categories: improved, stable, or worsened.

To assess associations between network types and health transitions, gender-stratified multinomial logistic regressions were estimated, controlling for age, education, country, caregiving provision, and major life events (partnership or employment transitions). Robust standard errors were applied to correct for heteroskedasticity.

### *Results*

Among men, belonging to Multi-tie – Supported – Satisfied networks is linked to a slightly higher probability (+2.8 pp) of improvement in mental health compared with the Family-rich – Supported – Satisfied reference group. Men in Partner-only – Unsupported – Satisfied networks also show a higher probability (+2.8 pp) of improvement in self-rated health, suggesting that even small but emotionally close networks may sustain subjective well-being. In contrast, those in Non-kin-focused – Unsupported – Unsatisfied networks are less likely (−3.4 pp) to experience gains in physical performance (grip strength).

Among women, compared with the Family-rich – Supported – Satisfied network, mental health improvement is notably more likely in Non-kin-focused – Unsupported – Unsatisfied networks (+5.3 pp) and moderately more likely in Multi-tie – Supported – Satisfied networks (+2.3 pp, borderline significant). Conversely, women in Partner-only – Unsupported – Satisfied networks are somewhat less likely (−2.2 pp) to report improvement. No meaningful differences emerge for self-rated health.

For functional health, associations are generally weak and non-significant for both genders. Across outcomes, patterns of worsening show no consistent association with network type,

suggesting that the multidimensional configuration of social networks better distinguishes those who experience health improvement rather than decline over time.

### *Discussion*

These findings show that the relationship between social networks and health in later life is more complex than a simple distinction between family-based and non-family configurations. Using the Family-rich – Supported – Satisfied network as reference, significant differences emerge only for specific outcomes and vary by gender, confirming that the effects of social connectedness are multidimensional and context-dependent. Multi-tie networks seem to promote better mental health, especially among women, but these effects are not consistent across outcomes. The coexistence of supportive yet vulnerable configurations among those with larger networks suggests that social resources may act both as protection and as a response to need.

Structural aspects alone do not explain health trajectories, and the presence of support does not necessarily lead to better outcomes. Satisfaction, likewise, may reflect adaptation or lowered expectations rather than true relationship quality. These results partly challenge theoretical models such as the Social Convoy and Socioemotional Selectivity frameworks, which tend to view close and supportive ties as universally beneficial.

The main contribution of this study lies in its multidimensional, person-centred approach, combining structure, function, and quality to identify meaningful network typologies. This perspective captures the heterogeneity of older adults' social environments and provides a more dynamic understanding of how networks relate to health change. However, some limitations have to be acknowledged. Causality cannot be firmly established, as networks and health could influence each other over time. Moreover, the analysis includes only individuals observed in both waves who survived the COVID-19 period, likely biasing results toward healthier and more socially active respondents. Finally, the self-reported indicators capture subjective rather than objective aspects of social exchange and health.

Despite these limitations, the results highlight that network diversity and non-kin connectedness are key resources for sustaining mental well-being in later life. In ageing societies with shrinking family networks, fostering community participation, volunteering, and intergenerational ties beyond the family may help preserve psychological health and social integration among older adults.

## References

- Antonucci, T. C., Ajrouch, K. J., & Birditt, K. S. (2014). The convoy model: Explaining social relations from a multidisciplinary perspective. *The Gerontologist*, *54*(1), 82-92.
- Barker, J. C. (2002). Neighbors, friends, and other nonkin caregivers of community-living dependent elders. *The Journals of Gerontology Series B: Psychological Sciences and Social Sciences*, *57*(3), S158-S167.
- Carstensen, L. L., Fung, H. H., & Charles, S. T. (2003). Socioemotional selectivity theory and the regulation of emotion in the second half of life. *Motivation and emotion*, *27*, 103-123.
- Charles, S. T., & Carstensen, L. L. (2010). Social and emotional aging. *Annual review of psychology*, *61*(1), 383-409.
- Cohn-Schwartz, E., Levinsky, M., & Litwin, H. (2021). Social network type and subsequent cognitive health among older Europeans. *International psychogeriatrics*, *33*(5), 495-504.
- Cornwell, B. (2011). Independence through social networks: Bridging potential among older women and men. *Journals of Gerontology Series B: Psychological Sciences and Social Sciences*, *66*(6), 782-794.
- Djundeva, M., Dykstra, P. A., & Fokkema, T. (2019). Is living alone "aging alone"? Solitary living, network types, and well-being. *The Journals of Gerontology: Series B*, *74*(8), 1406-1415.
- Ellwardt, L., Aartsen, M., & van Tilburg, T. (2017). Types of non-kin networks and their association with survival in late adulthood: A latent class approach. *Journals of Gerontology Series B: Psychological Sciences and Social Sciences*, *72*(4), 694-705.
- Fihel, A., Kalbarczyk, M., & Nicińska, A. (2022). Childlessness, geographical proximity and non-family support in 12 European countries. *Ageing & Society*, *42*(11), 2695-2720.
- Fiori, K. L., Antonucci, T. C., & Cortina, K. S. (2006). Social network typologies and mental health among older adults. *The Journals of Gerontology Series B: Psychological Sciences and Social Sciences*, *61*(1), P25-P32.
- Fiori, K. L., Smith, J., & Antonucci, T. C. (2007). Social network types among older adults: A multidimensional approach. *The Journals of Gerontology Series B: Psychological Sciences and Social Sciences*, *62*(6), P322-P330.
- Huxhold, O., Miche, M., & Schüz, B. (2014). Benefits of having friends in older ages: Differential effects of informal social activities on well-being in middle-aged and older adults. *Journals of Gerontology Series B: Psychological Sciences and Social Sciences*, *69*(3), 366-375.

- Kahn, R.L. & Antonucci, T.C. (1980) Convoys over the Life Course: Attachment, Roles, and Social Support. In: Baltes, P.B. and Grim, O.G., Eds., *Life Span Development and Behavior*, Vol. 3, Academic Press, New York, 253-286
- Krause, N. (2010). Close companion friends, self-expression, and psychological well-being in late life. *Social Indicators Research*, 95, 199-213.
- Litwin, H. (2010). Social networks and well-being: A comparison of older people in Mediterranean and non-Mediterranean countries. *Journals of Gerontology Series B: Psychological Sciences and Social Sciences*, 65(5), 599-608.
- Litwin, H., Levinsky, M., & Schwartz, E. (2020). Network type, transition patterns and well-being among older Europeans. *European Journal of Ageing*, 17(2), 241-250.
- Ng, Y. T., Huo, M., Gleason, M. E., Neff, L. A., Charles, S. T., & Fingerman, K. L. (2021). Friendships in old age: Daily encounters and emotional well-being. *The Journals of Gerontology: Series B*, 76(3), 551-562.
- Nylund, K. L., Asparouhov, T., & Muthén, B. O. (2007). Deciding on the number of classes in latent class analysis and growth mixture modeling: A Monte Carlo simulation study. *Structural Equation Modeling*, 14(4), 535–569. <https://doi.org/10.1080/10705510701575396>
- Rafnsson, S. B., Shankar, A., & Steptoe, A. (2015). Longitudinal influences of social network characteristics on subjective well-being of older adults: findings from the ELSA study. *Journal of Aging and Health*, 27(5), 919-934.
- Shiovitz-Ezra, S., & Leitsch, S. A. (2010). The role of social relationships in predicting loneliness: The national social life, health, and aging project. *Social Work Research*, 34(3), 157-167.
- Tomini, F., Tomini, S. M., & Groot, W. (2016). Understanding the value of social networks in life satisfaction of elderly people: a comparative study of 16 European countries using SHARE data. *BMC geriatrics*, 16, 1-12.