Interventions for non-self-sufficiency – Focus on care and social policies in South Tyrol

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1. Introduction

Current demographic trends and changes in family structures (increasing divorce rates, lower birth rates, a higher number of one- and two-person households, as well as high mobility, especially of the younger generations) point to a social change that poses new challenges to society as far as the care of older people is concerned (Petrini et al., 2019).

Because households are getting smaller and family structures are changing, care and support can no longer necessarily be provided within family circles (Oris et al., 2021; Quesnel-Vallée et al., 2016). However, most older people would like to stay in their own homes or familiar surroundings and neighbourhood as long as their health permits (Turjamaa et al., 2019). Thus, there is a need for enabling structures that take social change into account and ensure the long-term and continuous care of the elderly population (Plöthner et al., 2019).

The current social assistance system to support home care in Italy has several weaknesses. These include the rigidity of care hours and days, different procedural processes and, above all, a widespread lack of coordination and integration of the different interventions (Menghini & Tidoli, 2019). To date, alternative services and social policy re-examinations are marginal compared to the practical need. The bulk of the care burden in Italy continues to fall on families. Especially in rural communities, there is a dilution of the provision of local infrastructures and social networks. These developments call for new strategies that address complex needs, transform outpatient services into a care structure close to home and on time, and ensure self-determined living in one's own home.

This work stems from the doctoral thesis of Nadia Paone, and further statistical analyses were carried out by Evan Tedeschi as part of his work at the Competence Centre for Social Work and Social Policy.

This paper focuses on the older age groups, the "young old" and the very old. The research interest focuses on the living space and the immediate living environment of the target group, including relations with the neighbourhood. The basic assumption here is that the living environment opens the scope for activities outside the home (Bonaccorsi et al., 2020; Rautio et al., 2018). The following contribution analyses different forms of social support in the home environment, promoting equality and social cohesion.

A mixed-methods approach was used for the following study. Specifically, the study is based on a sequential and explorative design. The qualitative part of the research is exploratory and serves to collect elements that form the basis for the quantitative part of the research (Cohen et al., 2018). For the qualitative part, semi-structured interviews were conducted with experts (actors working in public and private institutions of elderly care).

In the qualitative part of the study, the first part of the guideline comprised general questions on age-appropriate housing and housing needs in old age; the second part concerning future approaches in the field of housing for the elderly in South Tyrol and support options to ensure that they remain in their own homes for as long as possible. Finally, the experts were asked for their views on the care situation in South Tyrol and on the gaps they perceived in the existing offer. Overall, the interviews with the experts make it clear that the immediate living environment is crucial for the subjective well-being of older people. The interviews suggest that there is a need for interdisciplinary cooperation between social and health care institutions. In summary, it can be

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concluded from the interviews that older people should be offered small everyday aid and pre-care services in addition to professional services.

The results of the qualitative interviews served as a basis for constructing the quantitative questionnaire.

Assuming that most older people want to remain in their own homes as long as possible, the question remains how to simultaneously ensure and promote dignified and participative ageing. Based on these assumptions, we aim to identify the following salient points: what supportive possibilities favour the elderly in living in their own homes as long as possible and what might need to be added to the previous services; what is or what might be the role of neighbourhood/voluntary work; what supports the social space and the living environment might offer; what features of the live environment act as resources and what as barriers for the elderly in South Tyrol.

2. Methodology and description of the sample

The sample comprised men and women aged between 60 and 101 and comprised 536 respondents. The sample of the quantitative part includes persons aged 60 and over who live in their own homes and reside in South Tyrol. The following considerations guided this decision: The research group should reflect the diversity of life situations of the elderly and include the entire Province of Bolzano.

The survey was conducted between June 2020 and April 2021 within the framework of a dissertation. Exclusion criteria are non-residence in the Province of Bozen-Bolzano and persons in an in-patient or semi-inpatient facility at the time of the study.

Concerning the outcome variables, based on the hypotheses identified above, we selected the following items: home satisfaction, satisfaction with the neighbourhood, time spent outside the home, and perceived health.

Using a Latent Class model, it is possible to test the conceptualisation of the idea that older people can live longer in their own homes as a latent categorical indicator, in which each option reflects a specific category that originates from the intersection of the factors we obtained above.

A possible way forward would be to consider our outcome variables.

However, this route is partially problematic, as we have ascertained that most of these indicators do not distribute usually and are characterised by strongly skewed distributions[1]. Consequently, we suggest dichotomising the variables into four indices to remedy the problems listed, with 0 representing an inadequate state and 1 as a good state.

The variables chosen for analysis are as follows: perceived health ("How is your health in general?": 0 = bad; 1 = good), time spent away from home (cross-reference of two questions: "How much time do you spend away from home?" and "Do you sometimes not leave the house for a few days in a row?": 0 = a little; 1 = a lot), satisfaction with the neighbourhood (how satisfied do you feel with your relationship with the neighbourhood?: 0 = not satisfied; 1 = satisfied), home satisfaction: (0 = not satisfied; 1 = satisfied).

It is now possible to consider a Latent Class Model, using the manifest variables illustrated above, which will be related to the model's latent concept to be analysed (Moisio, 2004). In other words, latent class analysis (LCA) allows us to specify the latent factor categories related to the possibility of being part of a specific category of observable variables.

The starting assumption is that local independence exists between the manifest variables, i.e., the observed association between them is zero within the different categories (McCutcheon, 1987).

Specifically, if we consider a given category of the latent factor X (X=t), the probability of combining a particular set of responses (A=k; B=i; C=j) is represented by an individual's chance of taking part in t of X, for the conditional probability of stating k in the case of A, i for B and j for C:

$$\pi_{tkij}^{XABC} = \pi_t^X \pi_{kt}^{A/X} \pi_{it}^{B/X} \pi_{jt}^{C/X}$$

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[1] We performed the Shapiro-Wilk and Komogorov-Smirnov tests to test the hypotheses of normality (Razali & Wah, 2011).

Where π_t^X denotes the probability of being a member of the latent class t = 1,2,..., T of the latent variable X (Zhou et al., 2018); $\pi_{kt}^{A/X}$ denotes the conditional probability of having the answer k within the variable A by the members of class t; while $\pi_{it}^{B/X}$ and $\pi_{jt}^{C/X}$ represent the same probabilities for items B and C. Starting with the four observable items and X, representing the latent factor to be estimated, our formula becomes:

$$\pi_{ta-n}^{XSF1-SF4} = \pi_t^X \pi_{at}^{SF1/X} \pi_{bt}^{SF2/X} \pi_{ct}^{SF3/X} \pi_{dt}^{SF4/X}$$

The analysis – implemented using Latent Gold software (Van der Nest et al., 2020) – shows that the four latent class model is the one that best fits the data, as it shows an increase in explained variance and, at the same time, the lowest value on the BIC.

3. Results

We can verify the magnitude of the different classes, which can be given a noun meaning, from the results of the conditional probabilities (Table 1).

Table 1 Results of latent class analysis: conditional probabilities

	Cluster1	Cluster2	Cluster3	Cluster4
Latent classes	0.26	0.27	0.37	0.09
Indicators				
Satisfaction for the neighbourhood				
0	0.13	0.45	0.44	**0.75**
1	**0.87**	**0.55**	**0.56**	0.25
Housing satisfaction				
0	0.03	0.24	**0.74**	**0.99**
1	**0.97**	**0.76**	0.26	0.01
Perceived health				
0	0.02	**0.51**	0.13	**0.86**
1	**0.98**	0.49	**0.87**	0.14
Probability of going out				
0	0.01	0.34	0.01	**0.78**
1	**0.99**	**0.66**	**0.99**	0.22

Specifically, we have identified four latent classes: Cluster 1(all indicators have very good values), Cluster 2 (indicators are good and have average values), Cluster 3 (the first indicator is average, the second has low values, and the others are very good), Cluster 4 (all indicators have low values).

Table 2: Descriptive statistics for the main variables (N. = 536)

Age	%	Employment status	%
60/64	18.10	Open-ended contract	8.40
65/69	19.59	Fixed-term contract	5.22
70/74	16.60	Pension: worker	19.59
75/79	13.99	Pension: employee	35.07
80/84	14.18	Pension: executive	9.89
85/89	7.84	Pension: entrepreneur	7.09
90 +	9.70	Pension: housewife	14.74
Total	100.00	Total	100.00
Marital status	**%**	**Education**	**%**
Single	10.45	Low	26.12
Married/cohabiting	56.34	Media	24.81
Separated/divorced	6.34	High	24.25
Widowed	26.87	Total	100.00
Total	100.00		

In conclusion, we have identified four classes that follow a conceptual structure in which the first and fourth clusters differ markedly and represent two very different types of individuals.

Table 3 Multinomial logistic model: estimates for the probability of belonging to a particular cluster rather than the first cluster

	Cluster 2 (medium)		Cluster 3 (medium)		Cluster 4 (low)	
	Coeff.	St. Dev.	Coeff.	St. Dev.	Coeff.	St. Dev.
Age						
60/64	(basis)	-	(basis)	-	(basis)	-
65/69	0.54	0.63	0.09	0.372	-1.53	1.09
70/74	1.20	0.63	0.01	0.410	-0.34	0.98
75/79	0.89	0.65	-0.38	0.446	-0.39	1.01
80/84	1.18	0.70	-0.09	0.495	-0.08	0.97
85/89	1.18	0.79	-0.73	0.633	-0.81	1.07
90+	2.07*	0.86	0.13	0.739	-0.13	1.12
Gender						
Male	(basis)	-	(basis)	-	(basis)	-
Female	0.16	0.37	0.17	0.28	0.44	0.54
Marital status						
Single	(basis)	-	(basis)	.	(basis)	-
Married/cohabiting	-0.24	0.58	-0.18	0.43	-0.44	0.77
Separated/divorced	-0.01	0.88	0.08	0.61	1.04	1.08
Widow/widower	-0.05	0.62	-0.16	0.48	-0.54	0.83
Education						
Low	(basis)	-	(basis)	-	(basis)	-
Medium	0.17	0.40	0.42	0.36	-0.41	0.56
High	-0.92	0.53	-0.26	0.42	-1.93*	0.86
Employment status						
Permanent employment	(basis)	-	(basis)	-	(basis)	-
Precarious employment	-1.79	1.25	-0.52	0.62	-12.03	1.60
Pension: blue-collar worker	-0.15	0.77	0.19	0.53	0.43	1.41
Pension: Employee	-0.03	0.73	0.34	0.46	0.65	1.35
Pension: Executive	0.57	0.79	0.18	0.53	0.00	1.69
Pension: Entrepreneur	-0.01	0.86	-0.15	0.64	-0.70	1.65
Pension: Housewife	-0.76	0.81	-0.70	0.59	-0.76	1.45
Friends frequency						
Every day	(basis)	-	(basis)	-	(basis)	-
2-4 times a week	0.72	0.49	0.62	0.33	0.37	1.00
1 time a week	1.35**	0.49	0.97**	0.35	2.58**	0.92
1 time a month	2.19**	0.67	1.23*	0.58	3.26**	1.02
2-4 times a year	1.74*	0.75	0.48	0.68	3.25**	1.08
Architectural barriers						
barriers	-1.07	1.13	3.41***	0.79	3.82**	1.25
Home security						
Not safe	(basis)	-	(basis)	-	(basis)	-
Safe	-0.23	0.34	-1.40***	0.26	-2.17***	0.49
Physical activity						
No	(basis)	.	(basis)	-	(basis)	-
Yes	-0.64	0.36	-0.37	0.29	-1.38**	0.52
Attends parties						
rarely	(basis)	-	(basis)	.	(basis)	-
often	-0.70*	0.36	-0.66*	0.29	-1.68**	0.54
Does volunteer work						
No	(basis)	-	(basis)	-		-
Yes	-0.70	0.37	-0.45	0.30	-1.91**	0.68
Intercepts	-0.62	1.07	1.13	0.74	0.51	1.82

N = 536
LL = -482.007
Pseudo R2 = 0.27
* p < 0.05. ** p < 0.01. *** p < 0.001)

The first cluster concerns individuals with above-average values, while the fourth has to do with individuals with the lowest scores overall. Between these two contrasting categories are

two groups of individuals who achieved intermediate values, albeit closer to the first group than the fourth. Potential confounding factors could be correlated with perceived health and the other variables seen above (Tab. 2).

We, therefore, introduced age as a categorical variable, employment status (composed, given the older age, of predominantly retired individuals), marital status and level of education. The sample comprised 326 women (61%) and 210 men (39%). The variables we use to test our hypotheses are frequency of meeting friends, the presence of architectural barriers in one's home (indicator obtained utilising factor analysis on a series of items), perceived housing safety, carrying out physical activity, and participation in neighbourhood festivals and performing voluntary work.

We aim to analyse the impact of certain variables on the clusters (Table 3). If we consider the frequency of seeing friends, we can see that as the probability of seeing friends decreases, the probability of being part of cluster 4 increases compared to cluster 1.

The index for architectural barriers follows a significantly decreasing trend in clusters 3 and 4 compared to cluster 1.

At the same time, as the probability of feeling safe at home decreases, the chances of being part of cluster 4 increase compared to cluster 1.

The same result can be observed in the case of physical activity: those who do not regularly engage in physical activity are more likely to be part of cluster 4 than cluster 1. Respondents who rarely participate in village festivals are likelier to be part of the last group, i.e. cluster 4.

4. Conclusions

The above analysis highlighted the following points:

- *doing household chores independently produces a positive impact;*
- *positive association with frequent attendance of friends;*
- *architectural barriers have a significantly negative impact;*
- *the perceived safety of one's home produces a positive impact;*
- *positive association with engaging in physical activity;*
- *Participating regularly in parties organised in one's community has a positive impact;*
- *doing voluntary work has a positive impact.*

Considering the salient points in the introduction, it is undoubtedly essential to ensure the elimination of architectural barriers in the home and, simultaneously, guarantee greater safety, especially for those with serious health problems and need aids such as wheelchairs. Frequently mentioned barriers in the home are stairs or steps and the lack of a lift. The reasons for a low sense of security in one's home are architectural barriers in the surroundings, burglaries, a poor state of health and the lack of contact persons in an emergency.

As emerged from the results, the role of neighbourhood and friendship relations is central in ensuring that most elderly people remain in their homes as long as possible. Suitable meeting places include one's own home, the homes of others and public spaces such as cafes and parks. Likewise, the active voluntary work experience is essential in this respect.

The social space and living environment must play a central role in ensuring activities and opportunities for older people to meet and socialise, as this is a crucial resource. Barriers, on the contrary, are all those elements that do not guarantee the elderly to move freely, especially for those with obvious health problems.

These findings also confirm that as the radius of action in old age is or becomes smaller, the home and the living environment (Barth & Olbermann, 2012) are becoming increasingly important. The importance of the home and the living environment increases to the same extent that the radius of movement decreases in old age, and it is reduced for physical, psychological, and social reasons (Saup, 1999).

However, it must be considered that a larger number of retrospective, pre-treatment and contextual variables would certainly have facilitated a greater identification and control of unobserved heterogeneity. For this reason, we believe that it would be desirable to supplement the results with data that consider a longitudinal approach, more extensive and richer in retrospective indicators. Therefore, further theoretical and empirical investigations are indispensable to refine the proposed model and conduct complementary analyses that partially weigh essential factors and elements that we have only been able to consider.

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