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Quality of Life and Urban / Rural Living: Preliminary Results of a Community Survey in Italy

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Abstract: *Background:* The purpose of this population-based study is to examine the association between subjective quality of life and rural/urban residence in six Italian regions, including age and gender into the analysis.

Methods: Study design: community survey. *Study population:* Samples stratified according to sex and age, drawn from municipal records. Sample size: 4999 people 18 years and older, from seven communities within six regions of Italy. *Tools:* Ad-hoc form to assess basic demographic data; SF-12. Interviewers were trained psychologists or medical doctors.

Results: 3398 subjects were interviewed (68% of recruited sample). The mean score of SF-12 in the overall sample was 38.4±6.1, SF-12 was higher in men than in in women (38.4±6.1 vs 37.5±5.9 F=99.18, df 1, 3396, 3397, p<0.0001); SF-12 score decreased from the youngest to the oldest age group, with significant differences between all ages groups; men showed higher scores in all age groups. The urban/rural difference of mean scores of SF-12 did not achieve statistical significance in women. Young men with urban residence had higher SF-12 scores than their counterparts with rural residence. Maen aged 65 years and older with rural residence showed, by contrast, higher scores than men from the same age group with urban residence.

Conclusions: Men show a higher subjective quality of life than women.

1. Subjective quality of life decreases with age in both genders.
2. Men are more sensitive to urban/rural residence than women.
3. Young men live better in cities, elderly men better in rural areas.

Keywords: Quality of life, Urban/rural residence, Gender, Age, Community Survey.

INTRODUCTION

Quality of life (QOL) is a complex, abstract, and multi-dimensional concept. Therfore, different conceptual and operational definitions have been used in QOL studies [1, 2]. QOL should not be confused with the concept of standard of living, which is based primarily on income and employment status. Instead, standard indicators of QOL include not only these dimensions but also the built environment, physical and mental health, education, recreation and leisure time, and social belonging [1, 3].

QOL may be measured by objective as well as subjective indicators. Both approaches need a multi-dimensional concept requiring the description of several life domains and their interplay as this contributes to QOL [4-6]

For measuring of subjective QOL the perceptions of individuals play a key role. Macroscopic features relating to the economic and social situation of a society are important for putting the findings at individual level into their proper context, but the key is the subjective perception of well-being of a person [5, 7]

The subjective perception of QOL has been considered of great relevance to measuring the outcomes of chronic diseases, particularly those with high impairment and a strong impact on daily life [8, 9]. It has become central to evaluat-

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Table 1. Enrolled Sample by Centre, Sex and Rate of the Non-Interviewed (Deceased, not Contacted, or Refusal)

Centre	Interviewed Males	Interviewed Females	Total Interviewed	Non Interviewed	Total Sample Randomized	% of Non-Interviewed
L'Aquila	253	300	553	151	704	21.4
Bari	384	421	805	167	972	17.2
Catania	210	294	504	162	666	24.3
Florence	266	422	688	158	846	18.9
Sulcis (Sardinia)	108	198	306	159	465	34.1
Pisa	60	94	154	310	464	66.8
Udine	156	232	388	494	882	56.0
Total	1437	1961	3398	1601	4999	32.0

ing the effectiveness of treatments as well, but more recently QOL has been used to compare living conditions and life satisfaction related to living environment [10-12].

In the past few years, increasing attention has been given to the role of place in shaping people's QOL. However, most of the theoretical work on QOL and health has been based on studies originating from urban environments and only few studies were focused on comparing the perception of QOL in urban and rural areas [13].

The purpose of this population-based study is to examine the association between subject QOL and rural/urban residence in six Italian regions, including into the analysis age and gender of participants.

METHODS

Design

The study is a community survey. Face-to-face interviews were carried out at the candidates' homes.

Recruitment Methods and Study Sample

The study sample was randomly drawn from municipal records of seven different areas in Italy including different locations with wide variations in socioeconomic conditions. These included: Sicily, Sardinia, Puglia in the South, Abruzzo in central Italy and Tuscany and Friuli-Venezia Giulia in northern Italy. In each region, an urban area and at least one rural sub-area were selected. The urban sub-areas were Iglesias in Sulcis (Sardinia), Catania in Sicily, Bari in Puglia, Sesto Fiorentino in Tuscany and Udine in Friuli-Venezia Giulia.

In each region a third of the sample was drawn from municipalities with less than 10,000 inhabitants. Municipalities with less than 10,000 inhabitants and outside of metropolitan areas were defined as rural.

Randomisation was performed after stratification by sex and four different age groups (18-24; 25-44; 45-64; >64).

Using the above mentioned methodology, a sample of 4999 people, aged 18 years and older, was drawn from the seven centers. The size of samples was: 704 in L'Aquila; 971 in Bari; 666 in Catania; 465 in Sulcis; 882 in Udine, 464 in Pisa and 846 in Florence (1310 in Tuscany).

For each person in the sample his or her general practitioner's name was recorded, which was obtained from the general practitioner's health authority registry (practically each Italian resident is registered with a general practitioner). The general practitioners were asked to sign an invitation to their patients for survey collaboration.

Subjects were contacted at home by phone and by mail by the local coordinator of the study.

Interview, Tools and Study Assessment

Interviews consisted of the following tools:

1. Basic demographic data were assessed by means of an ad-hoc form which previously has been utilized and validated in several regional and national surveys [14-16].

2. QOL was evaluated with the Short Form Health Survey (SF-12) [17]. The SF-12 includes the following dimensions: physical activity, physical health limitations on role or activities, emotional state, physical pain, self-evaluation of general state of health, vitality, social activity and mental health. The period of measurement is the previous month. Highest scores correspond to better conditions and QOL.

Ethical Aspects

The study was approved by the ethical committee of the Italian National Health Institute (Rome). An informed consent was signed by each candidate.

Data Analysis

Mean and standard deviation of SF-12 score was calculated in the overall sample and in the subgroups divided by sex, age and residence (urban/rural)

Comparisons between and within groups were carried out by means of ANOVA.

RESULTS

3398 subjects were interviewed (68% of recruited sample). Details about the total sample and the sample of those interviewed are reported in Tables **1**-**3**.

The mean score of SF-12 in the overall sample was 38.4±6.1. Men (N = 1437) showed better subjective QOL than women (N = 1961), scoring 39.6±6.3 at SF-12 versus 37.5±5.9 ($F=99.18$, df 1, 3396, 3397, $p<0.0001$). As reported in Table **4**, SF-12 scores decreased from the youngest age group (<25 years) to the oldest age group (>64 years), with significant differences between all ages groups. This trend was similar in both men and women (Table **5**), but with higher

Table 2. Enrolled aample by Aage, sex and the Non-Interviewed Rate

Age	Interviewed Males	% of Total	Non-Interviewed	% of Non-Interviewed	Interviewed Females	% of Total	Non-Interviewed Females	% of Non-Interviewed
18-24	192	14	180	48	241	12	97	29
25-44	499	35	378	44	614	31	226	27
45-64	460	31	287	39	707	37	242	26
>64	286	20	140	33	399	20	80	17

Table 3. Comparison Between Interviewed and Randomized sub-sSamples

Age and Sex	Interviewed	Randomized	Chi Square (1DF)	P
Male 18-24	192	372	2.5	0.10
Male 25-44	498	876	0.6	0.42
Male 45-64	441	728	0.1	0.99
Male >64	286	426	3.2	0.09
Female 18-24	241	338	0.39	0.53
Female 24-44	609	835	0.45	0.51
Female 45-64	703	945	0.005	0.81
Female >65	399	479	2.3	0.12

Table 4. Distribution of Age and Quality of Life (SF12 Score)

Age	Number (%)	SF-12	F ANOVA (DF) [Against <25]	P	F ANOVA (DF) [Against 25-44]	P	F ANOVA (DF) [against 45-64]	
<25	433	41.0±5.8	Pivot	-----	--------	--------	----------	---------
25-44	1113	39.4±6.2	21.5 (1,1544,155)	<0.0001	Pivot	--------	----------	-------
45-64	1167	38.1±5.8	80.0 (1,1958,1959)	<0.0001	26.8 (1,2278,2279)	<0.0001	Pivot	--------
>64	685	35.7±6.8	180.2 (1,1116,1117)	<0.0001	140.2 (1,1796,1797)	<0.0001	65.0 (1,1850,1851)	<0.0001
Total	3398	38.4±6.1	39.2 (3,3394,3397)	<0.0001	---------			

Table 5. Distribution of Age, Gender and Quality of Life (SF12 Score)

Age	Male s Number (%)	SF-12 Score	Females Number (%)	SF-12 Score	Anova F (DF)	P
<25	192	42.4±6.1	241	39.8±5.6	19.4 (1,431,432)	<0.0001
25-44	499	40.2±6.1	614	38.8±6.1	14.5 (1,1111,1112)	<0.0001
45-64	460	39.1±5.9	707	37.5±5.8	20.9 (1,1165,1166)	<0.0001
>64	286	37.5±7.3	399	34.4±6.0	37.4 (1,683,684)	<0.0001
Total	1437	39.6±6.3	1961	37.5±5.9	99.2 (1,3396,3397)	<0.0001
Between gender	F=25.47 DF (3,1433,1436) P<0.0001		F=58.55 DF (3,1957,1960) P<0.0001			

Table 6. Distribution of Urban/Rural Residence, Age, Gender (Female) and Quality of Life (SF12 Score)

Age	Urban Number (%)	SF-12 score	Rural Number (%)	SF-12 score	F (df)	p
<25	134	40.3±4.6	99	39.3±7.1	1.70 (1,231,232)	0.194
25-44	454	38.5±5.4	222	39.2±7.2	2.00 (1,674,6759	0.158
45-64	492	37.3±5.7	221	38.1±5.9	2.94 (1,711,712)	0.087
>64	250	34.8±7.6	129	33.4±6.5	3.18 (1,377,378)	0.075
Total	1331	37.4±6.7	671	37.8±6.0	1.70 (1,2000,2001)	0.192
Between residence	F=31.89 DF (3,1326,1329) P<0.0001		F=23.94 DF (3,667,670) P<0.0001			

Table 7. Distribution for Urban Rural Residence age, gender (Males) and quality of life (SF12 score)

Age	Urban Number (%)	SF-12 score	Rural Number (%)	SF-12 Score		
<25	130	43.2±5.3	62	40.8±7.9	6.2 (1,190,191)	0.014
25-44	339	39.7±6.5	160	41.3±5.3	7.3 (1,497,498)	0.007
45-64	302	38.7±5.8	158	39.9±6.1	4.3 (1,458,459)	0.039
>64	186	36.8±7.4	100	38.7±6.8	4.5 (1,284,285)	0.034
Total	957	39.3±6.3	482	40.3±6.2	8.2 (1,1440,1441)	0.004
Between residence	F=30.11 DF (3,953,956) P<0.0001		F=3.86 DF (3,456,479) P=0.010			

scores across all age groups for men as compared with women. Among women, the distribution by age group (Table **6**) did not differ according to urban/rural residence. Only elderly women showed a trend towards better QOL in urban areas,s but the difference between urban and rural mean scores of SF-12 did not reach statistical significance. Young men with urban residence had higher SF-12 scores than their counterparts with rural residence (Table **7**). Men with >65 years of age living in rural areas showed, by contrast, higher scores than men from the same age group with urban residence (Table **7**).

DISCUSSION

The results of our study can be summarized as follows:

1. Men enjoy a higher subjective QOL than women;
2. Subjective QOL decreases with age in both genders;
3. Men are more sensitive to urban/rural residence than women;
4. Young men live better in cities, elderly men better in rural areas.

Due to the lack of comparable international studies it is hard to interpret the gender differences shown in this study. Therefore, we cannot say whether these differences are characteristic for Italy or whether they could be found in other countries as well. The ESEMED study carried out a nationwide survey in Italy, Belgium, France, Germany and Spain using SF-12 but the data concerning the national and sex difference on SF-12 have not been published [18]. Interestingly, in a recent paper the impact of gender discrimination on individual life satisfaction was analyzed with a cross-sectional model of 66 countries, using the Cingarelli-Richards Human Rights Database [19]. In contrast to the present results, in this cross-sectional survey being man was associated with less life satisfaction, but in agreement with our survey men aged 65 years and older showed less life satisfaction. Overall, men and women are more satisfied with their lives when societies become more equal. Disaggregated analysis suggests that women, contrary to men, are more satisfied with increasing equality independent of income and political ideology. Equality in economic and family matters does in general not affect life satisfaction. However, women are more satisfied with their lives when discriminatory practices were less prevalent in the economy 20 years ago [20]. However, as the methodology of the two surveys and the constructs measured (subjective quality of life and life satis-

faction) are quite different,direct comparison with our findings seems problematic.

Classic and contemporary sociological theories suggest that social interaction differs in rural and urban areas [21]. Intimate, informal interactions (strong ties) are theorized to characterize rural areas while urban areas may possess more formal and rationalized interactions (weak ties). Literature on aging and social support stresses the importance of social interaction as a predictor of health among the aged. Using data from Wave III of the Americans' Changing Lives (ACL) study, the hypothesized differences between informal strong ties and formal weak ties on the subjective well-being of older adults in rural, urban, and suburban areas has been examined. Visiting with friends, neighbors, or relatives turned out to have a stronger positive effect on subjective well-being of older adults living in rural areas than those living in urban areas [21]. The study highlights the role of informal strong ties in increasing subjective well-being. Our results suggest that elderly men probably benefit from strong ties available in rural areas more than elderly women and young men.

Technological changes and improved electronic communications seem, paradoxically, to be making cities more, rather than less, attractive for young people, particularly young men. For example, at the time of the survey (2008-2009) in Italy only 40% of rural areas were covered by the Internet as compared to 100% of urban areas [22]. In fact, the historical sociology on social interaction does not take into account that nowadays the socialization of young people happens to a considerable extent through the Internet. Another point is that most opportunities for formal and informal non-internet socialization such as schools, discotheques, etc., are located in urban areas [23].

There is a strong correlation between urbanization and economic development across countries, and within-country evidence suggests that productivity rises in dense agglomerations. But urban economic advantages are often offset by the perennial urban curses of crime, congestion and contagious disease [24]. Probably these disadvantages affect more elderly men, the fact that women seem to be less sensitive to these factor needs further analysis [25].

In conclusion one may hypothesize that older men benefit more from informal social support characteristic of the life in rural areas while young men benefit more from the new opportunities of the cities.

LIMITATIONS

Our study has some significant limitations. First, the observational methodology of epidemiological studies can be ineffective in verifying hypotheses. Thus, the results of our study can only be viewed as a source for generating hypotheses and must be considered as a heuristic contribution stimulating future research in the field. In addition, the results of the univariate analyses conducted for the purposes of the study, indicating gender, age, and urban/rural living as determinants of subjective QOL, have to be considered as preliminary as further analyses of their inter-relationship and the role of co-factors associated with these variables (e.g., differences in mental health and physical health, co-influence of the same factors) are necessary.

CONFLICT OF INTEREST

The authors confirm that this article content has no conflicts of interest.

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