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¹Quality of life and Sense of community. A study on health and place of residence

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The aim of the study was to assess the predictive role of the affective link with the place of residence (place attachment) and the perception of one's own community of residence (sense of community) on health and quality of life. Other variables were considered: size of place of residence, income, level of education, marital status, age and gender. Participants included 344 adult subjects living in Piedmont, Italy. The instruments used were the Italian Sense of Community Scale, the Residential Attachment Scale, and the Italian version of the WHOQoL-BREF questionnaire. Data showed that: 1) quality of life is affected by sense of community, but not by place attachment and 2) living in a small town enhances the environmental, psychological and relational quality of life.

Key words: health, sense of community, place attachment, quality of life, urban life

Introduction

According to Trickett and Rowe (2012) “an ecological paradigm for community research and action has been elaborated in community psychology over the past 40 years (...) In recent years, ecological perspectives have become more visible in prevention, health promotion, and public health” (p. 125). To approach this perspective means to take the environment into account when conducting research and/or intervention. Both situational and psychological factors can produce stress (see Dohrenwend,

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1978). However, the environmental system, comprising different life domains, may bring stressors but also important resources (see Moos, 2002). From a perspective aimed at increasing health, the interest lies in investigating contextual factors that foster well-being and protect individuals during stressful life events.

Indeed, health is affected not only by lifestyle and socio-economic conditions, but also by other factors that have not traditionally been studied and considered as risk factors or protective factors (Boekaerts, Maes, & Karoly, 2005; Marmot, 2004; Singh-Manoux, 2003; Tarkowski, 2009).

Starting from the idea that the origins of disease are often outside the health sector, as classically understood (Annett & Nickson, 1991), interest has grown in developing an environmental analysis focused on the impact of place on health (Macintyre & Ellaway, 2000; Macintyre, Maciver, & Sooman, 1993) and on well-being (Atkinson, Fuller, & Painter, 2012; Rollero & De Piccoli, 2010a). The importance of territorial communities (Gusfield, 1975) – or at least some aspects of them – for health and quality of life of individuals is now an important subject of study and interest for both researchers and public healthcare providers.

Quality of life is a concept that neatly sums up how good people feel, not only from the standpoint of physical health, but also in relation to a set of other different factors. The World Health Organization (WHO) stated that the quality of life is not merely the absence of disease, but a state of complete physical, mental and social well-being. More specifically, the WHO defined quality of life as individuals' perceptions of their position in life in the context of the culture and value systems in which they live and in relation to their goals, expectations, standards and concerns (WHOQoL Group, 1998). For a detailed overview of theoretical perspectives on the quality of life, see Sirgy, 2011). In other words, quality of life concerns a combination of physical, psychological, and social aspects, and emphasizes the proactive approach that individuals can take to their own well-being (WHOQoL Group, 1995).

It follows from this definition that quality of life and health involve both the individual and the social dimensions, on the one hand, and the subjective and objective aspects, on the other, since it is

now clear that subjective factors interact with objective ones and influence each other in turn (Cummins, 2000; Cummins & Nistico, 2002). Nevertheless, even if subjective and objective aspects have some overlap, they still have a specific nature of their own, and it is therefore only by studying both that people's level of satisfaction with their lives can be understood (Camfield & Skevington, 2008). Indeed, as Hawthorne, Herrman and Murphy suggest (2006), "although social indicators (e.g. economic resources, gross domestic product) form the milieu within which individuals live, their quality of life is determined by evaluation of their personal lives and social situation" (p. 37).

Therefore, how people perceive their living environment is an interesting issue to investigate in order to deepen reflection on the question of quality of life. As Parker et al. (2001) and Kawachi and Berkman (2003) have noted, the study of the environment, with particular regard to people's perception of it, has developed around a richly varied set of concepts, principally: sense of community, the competent community, collective efficacy, community empowerment. The different nature of these constructs poses a methodological problem and limits the scope for comparison, because these measures are assessing different aspects of the perception of community social dynamics (Parker et al., 2001; Perkins, Florin, Ric, Wandersman, & Chavis, 1990).

Another methodological issue concerns the heterogeneity of the definitions of place. Place is considered in a variety of ways: a small number of studies have assessed community attributes (Baum, Ziersh, Zhang, & Osborne, 2009; Kingstom, Mitchell, & Stevenson, 1999) and a few have examined how people's perceptions of their neighborhood affect their health (Hill, Shepherd, Welch, Dirks, & McBride, 2012; Wen, Hawkley, & Cacioppo, 2006).

Greater conceptual clarity therefore appears desirable. It is therefore necessary to specify what are considered the potential contributory factors affecting the health of the population, using concepts that are as clear and well defined as possible, in order to develop the theory in such a way as to enable differences and/or similarities between these constructs to be identified (Parker et al., 2001).

Health, place attachment, sense of community and quality of life

Recent literature on contextual factors affecting health has paid particular attention to the place of residence, showing the relationship between place of residence and physical and/or mental health (Kawachi & Berkman, 2003; Wen et al., 2006). It has been clearly shown that people's relationship to their living environment plays a key role in their well-being (Rollero & De Piccoli, 2010a).

The study of people's relation to their living environment has been developed from different perspectives within an interdisciplinary framework: epidemiology, public health, medical geography, medical sociology, health policy, community and social psychology, etc. From a psychological standpoint, aspects of the experience of place have been described in terms of several different concepts, such as sense of place (Husserl, 1954; Jorgensen & Stedman, 2001), topophilia (Tuan, 1974), place dependence (Stokols & Schumaker, 1981), community attachment (Hummon, 1992), sense of community (McMillan & Chavis, 1986), and community identity (Puddifoot, 1995). The relationship between individuals and their place of residence also represents an interesting line of research for the study of quality of life (Bonaiuto, Fornara, & Bonnes, 2006). Wilson et al. (2004) look to the development of research lines exploring the relation between place and health, and they acknowledge that the psychosocial literature has devised a series of useful concepts and tools for determining the significance of place, attachment to it, and well-being.

Among the plethora of constructs describing the relationships between individuals and place, the concept of place attachment in today's literature lies at the very heart of the studies on people and places (Altman & Low, 1992; Brown, Perkins, & Brown, 2003; Giuliani, 2003; Manzo, 2003; Knez, 2005; Lewicka, 2005; Hidalgo & Hernández, 2001; Hernández, Hidalgo, Salazar-Laplace, & Hess, 2007; Rollero & De Piccoli, 2010b). Place attachment is a multifaceted and complex phenomenon that incorporates different aspects of people-place bonding and involves the interplay of affect and emotions, knowledge and beliefs, and behaviors and actions in reference to place. It encourages greater freedom of behavior, exploration, confidence, and affective responsiveness within the local community (Fried, 2000). Place attachment can be defined as the affective link that people establish

with specific environments where they have a propensity to remain and where they feel comfortable and safe.

The place of residence is also important for the individual because of the interpersonal relationships and social links that are built there. Indeed, many studies have found that neighborhood environment represents an important indicator for individual health (Wen et al., 2006; Wilson et al., 2004). Parkes and Kearns (2006) suggest that neighborhood has a multidimensional impact on health. To this end, we believe it is important to consider not only the attachment to the place (referred to the space of the community; see Kagan, Burton, Duckett, Lawthom, & Siddiquee, 2011) but also the sense of belonging to the community (referred mainly to the social ties of the community) i.e., the sense of community. Sarason (1974) described this “sense” as the extent to which a person feels part of a readily available, supportive, and dependable structure. McMillan (1976) defined the sense of community as “a feeling that members have of belonging and being important to each other, and a shared faith that members’ needs will be met by their commitment together” (p. 11). In other words, the sense of community refers to people’s perception of interconnection and interdependence and describes experiences of community – both geographically and relational – in global terms as feeling of belonging, perceived influence over the community, integration and fulfillment of needs. According to Peterson, Speer and McMillan (2008), sense of community “refers to the fundamental human phenomenon of collective experience, and it has been studied in a variety of contexts such as neighborhoods, psychosocial rehabilitation programs, community organizations, workplaces and faith institutions” (p. 62).

Although the concept of sense of community comprises also the affection toward physical places, notable differences appear when considering the inventories measuring sense of community and place attachment. Indeed, the scales on place attachment are focused on the affective link toward places (the town, the village, or the neighborhood), whereas the scales on sense of community investigate also other dimensions, accordingly with the theoretical definition of the concept (i.e., the perceived quality of social relationships, not actually considered by place attachment).

Some empirical findings have showed that psychological benefits may accrue from experiencing a higher sense of community and that sense of community can be an explanatory tool for individual well-being; perceptions of problems health experiences are correlated with lack of sense of community (Ahern, Hendryx, & Siddharthan, 1996; Bachrach & Zatura, 1985; Davidson & Cotter, 1991; Farrell, Aubry, & Coulombe, 2004; Riger & Lavrakas, 1981). Sense of community increases with years of residence (Chavis, Hogge, McMillan, & Wandersman, 1986; Pretty, Conroy, Dugay, Fowler, & Williams, 1996) and is generally higher among people who live in small towns than those who live in large cities (Prezza, Amici, Roberti, & Tedeschi, 2001).

Previous studies have examined certain place characteristics, such as size, according to different criteria, i.e. number of inhabitants, population density, differences between rural and urban areas. Number of inhabitants and population density have been found to affect health and quality of life. Residents of rural areas have been reported to have access to fewer health care resources (Peterson, Tsai, Petterson, & Litaker, 2009), but those living in urban areas were less likely to report positive communication and interactions with healthcare providers (Wallace, DeVoe, Bennett, Roskos, & Fryer jr., 2008). Data are not always congruent due to the different characteristics of rural and urban environments and population density from country to country. Cramer, Torgersen, & Kringlen (2004) showed that a low density context is fundamental for quality of life, as it improves subjective well-being, increases the number of friends people have and reduces the presence of negative life events. Fassio, Rollero, and De Piccoli (in press) found that individuals living in places with a large number of inhabitants show lower levels of psychological health, relational and environmental quality of life.

Objectives of the study and hypotheses

The aim of the current study was to assess the predictive role of the affective link between place of residence, the perception of one's own community of residence and the size of the place of residence on quality of life. In this study, we were interested in analyzing differences between

high/low numbers of inhabitants, using the threshold of 20,000 inhabitants as a criterion to differentiate between cities and towns. We considered the limit of 20,000 inhabitants for two reasons: (a) because this is the threshold adopted by the UN to classify rural and urban populations when comparing countries in the world (Ortolani, 1984); (b) because this break of 20,000 inhabitants represents half of the Italian population: 53% of Italians live in towns with more than 20,000 inhabitants (Mainardi, 1998).

As regards the link that people feel with the place where they live, we referred to the concept of place attachment (Altman & Low, 1992; Fried, 1963), which concerns the affective dimensions that connect people to a place. As regards the link with one's own community of residence, we referred to the concept of sense of community (McMillan & Chavis, 1986; Sarason, 1974). Because socio-demographic characteristics play a key role in people's health and quality of life – married people and those on a high income are more likely to be physically and psychologically healthy, whereas older people report lower levels of quality of life (De Girolamo et al., 2001; Marmot, 2004) – these dimensions were also taken into consideration.

Following the multidimensional conceptualization of quality of life (WHOQOL Group, 1998), the predictive role of independent variables was assessed separately for each domain, i.e. physical, psychological, relational and environmental. We tested the following hypotheses:

HP 1: because sense of community is related to self-reported general health and depressive symptoms (Parker et. al., 2001) and because places are created by relationships between people (Frohlich, Corin, & Potvin, 2001), sense of community and place attachment should have a positive effect on quality of life in all four dimensions considered.

HP 2: in terms of socio-demographic characteristics, in line with several studies, we expect that being young, male, on a higher income, with a higher level of education, and not being alone correspond to a better quality of life (De Girolamo, et al., 2001; Marmot, 2004).

HP 3: as the quality of social behavior deteriorates when personal space is confined (Hall, 1966), and sense of community and life satisfaction are greater in smaller neighborhoods (Prezza &

Costantini, 1998), people who live in small towns should have a better quality of life than those who live in cities.

The context

The study was carried out in Piedmont, a region of north-western Italy. Turin, the only metropolitan center, has about 907.000 inhabitants; the remaining eight districts have fewer than 100,000 inhabitants. Recent epidemiological studies conducted on a representative sample of the resident population of this region have shown differences in the perception of health (see www.epicentro.iss.it/PercezioneSalute09.asp). In particular, the results, which are in line with other Italian and European data, show that those who claim a better state of health are younger people (18-34 years of age), men, people with advanced educational qualifications, and those living without economic pressures. On the other hand, depressive symptoms mostly affect older people (the 50-69 age group), women, low educational achievers, and those experiencing economic difficulties.

METHOD

Data were collected via a self-reported questionnaire, which took about 20 minutes to complete. Participants were contacted by 4th year university students attending a Community Psychology course and were asked to participate in a study about quality of life. Although the sampling technique does present limitations in that it was not purely random, every attempt was made to access a wide range of respondents in terms of the age range considered, gender, educational level and occupational status. Anonymity of the respondents was assured.

Participants

A total of 344 adult subjects living in Piedmont participated, aged from 18 to 88 years (average age = 40; S.D. = 15; M = 43%; F = 57%). Participants were recruited from different cities in Piedmont, via a convenience sampling method. 30.3% of participants had obtained the minimum school-

leavers' educational certificate, 39.1% a high school diploma, and 30.6% a university degree. 44.7% of participants were married, 43% were single, and 12.3% divorced or widowed. Their education, marital status and occupational status showed percentages similar to those of the population living in Piedmont. As regards occupation, 24.6% were students, 52.6% employed, 18.4% retired or housewives, and the remaining 4.4% registered unemployed. 58.4% of respondents lived in a place with less than of 20,000 inhabitants and 41.6% in a large town.

Respondents were shown a list of 5 options to identify their income levels; we then classified them into low (12%), middle (71.7%), and upper income (16.3%) categories.

Measures

Participants rated items and answered questions on different topics. The following variables were investigated:

1) *Quality of life.* Participants responded to 24 items (5-point Likert) from the *Italian version of the WHOQoL-BREF* standardized questionnaire (De Girolamo et al., 2001), which measures the following domains: physical health (7 items; WHOQoL_PH), psychological health (6 items; WHOQoL_PS), social relationships (3 items; WHOQoL_SR), and environment (8 items; WHOQoL_E). Higher scores correspond to better quality of life.

2) *Perception of the local community.* To assess perception of the local community the Davidson and Cotter's (1986) Sense of Community scale was employed. The scale has been validated in the Italian context (Prezza, Costantini, Chiarolanza, & Di Marco, 1999) leading to an Italian version (*Italian Sense of Community Scale – ISCS*) containing 18 items, such as “I like the neighborhood in which I live”; “if I need help, this neighborhood has many excellent services available to meet my needs”. Items were rated on 4-point Likert-type scale (1 = strongly agree, 4 = strongly disagree). Responses were reverse-scored where appropriate, so that higher scores indicated a greater psychological sense of community. Given the internal consistency value for the items ($\alpha = .84$), a single index was calculated ($M = 51, SD = 7$).

- 3) *Place Attachment.* Participants responded to the *Residential Attachment Scale (RAS)*; Bonaiuto, Fornara, Aiello, & Bonnes, 2002), a unifactorial Italian scale created to measure place attachment, consisting of 8 items (e.g. “I would like to live in another neighborhood”; “For me, leaving my neighborhood/zone would be really hard”). Items were scored on a seven-point scale from (1), completely untrue for me, to (7), completely true for me. As before, a single index was calculated ($\alpha = .84$; $M = 37.6$, $SD = 10.5$).
- 4) *Physical health.* The participant’s physical health was assessed through a chronic diseases checklist. Subjects were requested to tick off any physical problem from a list of the nine most common chronic diseases in the general population (i.e., chronic allergies, diabetes, high blood pressure, dermatitis; see ISTAT, 2008). On the basis of these answers, we created a score for each subject by summing each reported disease (from 0 = no chronic disease to 9 = all the chronic diseases on the checklist).
- 5) *Place of residence characteristics.* Participants were asked to indicate the number of inhabitants of the place where they live to differentiate between little vs. large town.
- 6) *Socio-demographic items.* We collected the following data items: age, gender, marital status, income and number of inhabitants of the place of residence.

Data analysis

The hypotheses were tested by means of a multivariate hierarchical regression model replicated on each of the four WHOQoL-BREF subscales. This analytical technique enabled the variability of the dependent variable to be analyzed into several net contributions attributable to each of the explanatory factors included in the model.

Each model included 9 predictors, logically organized into 4 blocks of content, summarizing the following: socio-demographic characteristics of participants (gender, age, marital status, income); physical health diseases, the number of inhabitants of the place where the respondents live (little vs. large town) and the psychological dimensions related to the environment (sense of community and

place attachment). Following this logical structure, we grouped the predictors into four sets and entered them step by step into the predictive model.

All statistical analyses were carried out using the SPSS 18.0 software.

RESULTS

Descriptive analyses

Table 1 shows the average scores, the standard deviations and the correlations between the WHOQoL subscales. All WHOQoL subscales were strongly positively correlated.

Table 1. Descriptive Statistics and Intercorrelations among the WHOQoL subscales

	WHOQoL_PH	WHOQoL_PS	WHOQoL_SR	WHOQoL_E
WHOQoL_PH				
WHOQoL_PS	.58**			
WHOQoL_SR	.34**	.56**		
WHOQoL_E	.46**	.53**	.38**	
Mean	69.58	60.21	68.05	56.73
SD	12.37	15.07	16.94	11.76

When chronic disease was investigated, 46.4% of the participants did not suffer from any chronic disease, 29.8% reported one, 14.6% two and the remaining 9% three or more. The frequency of reported chronic disease was the same as that for the Italian population as a whole (ISTAT 2008). The number of chronic diseases was positively linked to age ($r = .39$; $p < .001$).

Predicting quality of life

The explanatory power of the predictors for the four WHOQoL subscales is shown in the following table. In terms of R^2 (see Table 2)², the best fit for the models was obtained for the environmental and psychological domains of quality of life (WHOQoL_E; WHOQoL_PS), while the fit was less satisfactory for WHOQoL_SR.

² The categorical predictors used in the four models are: male, medium and upper income (low income as reference category), being single, being widow or divorced (being married as reference category).

Table 2. Hierarchical regression models: coefficients of determination

Dependent variable	R^2	Adjusted R^2
WHOQoL_E	.36	.34
WHOQoL_PS	.20	.17
WHOQoL_PH	.17	.15
WHOQoL_SR	.10	.07

The best predictors for WHOQoL_E (see Table 3) were income and gender (being female positively affected this dimension of quality of life). Moreover, living in a small town and having a greater psychological sense of community enhanced the perceived environmental quality of life.

Table 3. Hierarchical multiple linear regression results for WHOQoL_E

		WHOQoL_E		
Step		B	Beta	Adjusted R^2
	Constant	47.23		
1	Males	-3.04*	-.13	
	Medium income	8.87***	.34	
	Upper income	17.60***	.56	.16
2	Males	-2.91*	-.12	
	Medium income	8.70***	.34	
	Upper income	17.27***	.55	.17
3	Males	-2.90*	-.13	
	Medium income	7.85***	.30	
	Upper income	17.53***	.56	
	Living in a large town	-4.96***	-.21	.21
4	Males	-3.18**	-.14	
	Medium income	6.26***	.24	
	Upper income	14.48***	.46	
	Living in a large town	-2.71*	-.12	
	Sense of community	.67***	.10	.34

Note: * $p < .05$; ** $p < .01$; *** $p < .001$.

On the psychological subscale (see Table 4), a higher income, being female, the absence of chronic disease and a greater sense of community positively affected quality of life, while being unmarried negatively affected this dimension of quality of life.

Table 4. Hierarchical multiple linear regression results for WHOQoL_PS

WHOQoL_PS	
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Step		B	Beta	Adjusted R ²
1	Constant	66.32		
	Males	-5.17***	-.17	
	Age	-.24***	-.24	
	Medium income	9.55***	.29	
	Upper income	14.82***	.37	
	Single	-6.76**	-.23	
	Widow/divorced	.48	.01	.10
2	Males	-4.96***	-.17	
	Age	-.19***	-.19	
	Medium income	9.26***	.28	
	Upper income	14.26***	.35	
	Single	-6.64***	-.22	
	Widow/divorced	.58	.01	
	Chronic diseases	-1.27*	-.12	.11
3	Males	-4.93***	-.17	
	Age	-.21***	-.21	
	Medium income	8.53***	.26	
	Upper income	14.48***	.36	
	Single	-6.48***	-.22	
	Widow/divorced	.73	.02	
	Chronic diseases	-1.36*	-.12	
	Living in a large town	-4.27***	-.14	.13
4	Males	-5.17***	-.17	
	Age	-.23***	-.24	
	Medium income	7.44***	.22	
	Upper income	12.58***	.31	
	Single	-6.55***	-.22	
	Widow/divorced	.50	.01	
	Chronic diseases	-1.31*	-.12	
	Sense of community	.63***	.29	.17

Note: *p < .05; **p < .01; ***p < .001.

The best predictors on the WHOQoL_PH (Table 5) subscale were the absence of chronic disease and income. Being widowed negatively affected the physical dimension and a higher sense of community had a positive influence.

Table 5. Hierarchical multiple linear regression results for WHOQoL_PH

WHOQoL_PH				
Step		B	Beta	Adjusted R ²
1	Constant	69.56		
	Medium income	8.73***	.27	

	Upper income	12.16***	.31	
	Widow/divorced	-5.26*	-.23	
	Single	-1.59	-.05	.07
2	Medium income	8.09***	.25	
	Upper income	10.95***	.28	
	Widow/divorced	-5.05*	-.11	
	Single	-1.41	-.05	
	Chronic diseases	-2.75***	-.25	.12
3	Medium income	7.66***	.24	
	Upper income	11.08***	.28	
	Chronic diseases	-2.79***	-.26	.13
4	Medium income	6.78***	.21	
	Upper income	9.35***	.24	
	Widow/divorced	-5.24*	-.12	
	Single	-1.43	-.05	
	Chronic diseases	-2.77***	-.26	
	Sense of community	.36*	.17	.15

Note: *p < .05; **p<.01; ***p<.001.

Finally, as for WHOQoL_SR (see Table 6), the predictors that positively influenced this subscale were high income and living in a small town, while being unmarried negatively affected perceived social relations and quality of life.

Table 6. Hierarchical multiple linear regression results for WHOQoL_SR

		WHOQoL_SR		
Step		B	Beta	Adjusted R ²
	Constant	69.96		
1	Medium income	6.42*	.17	
	Upper income	9.39**	.22	
	Single	-6.24*	-.18	
	Widow/divorced	-3.23	-.06	.04
2	Medium income	6.12*	.16	
	Upper income	9.39***	.21	
	Single	-6.12*	-.18	
	Widow/divorced	-3.20	-.06	.04
3	Upper income	9.62***	.21	
	Medium income	5.21	.14	
	Single	-5.87*	-.17	
	Widow/divorced	-2.95	-.06	
	Living in a large town	-5.37**	-.16	.06
4	Upper income	7.96*	.17	
	Medium income	7.96	.17	
	Single	-6.04*	-.18	
	Widow/divorced	-3.16	-.06	

Living in a large town	-4.07*	-.12	.07
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*Note: *p < .05; **p<.01; ***p<.001.*

DISCUSSION

This study aimed to assess the role of place attachment and sense of community affecting quality of life and health. “Classical” social determinants of health (gender, age, income, level of education, and marital status) and place of residence dimension were also taken into account.

As for the social and demographic variables, it has been noted that income is a predictor of quality of life in line with international epidemiological studies (Marmot, 2004; Wilkinson & Pickett, 2009); self-rated physical health determines physical and psychological quality of life; being female positively affects environment and psychological quality of life: on this regard hypotheses are not confirmed. But this is not a surprise: few studies have deserved attention to the determinants of quality of life for men and women (Li, Lin, & Chen, 2011; Trentini et al., 2011) and results concerning the quality of life from a gender perspective are controversial (Skevington, 2010). To deepen the study on this topic should be necessary.

Other hypotheses were partially confirmed. Although people who reported high place attachment achieved higher scores on the four quality of life dimensions, and higher scores in terms of environmental and psychological quality of life and social relationships were associated with a high sense of community, our data show that environmental, psychological and physical quality of life are affected by sense of community, while place attachment appears not to have any effect on quality of life. Sense of belonging to the community, the perception of interconnection and interdependence with others, that is a relational dimension, have a positive effect on quality of life; the affective link that people establish with the environment is not a quality of life predictor.

In more detail, we found that sense of community positively affected all the QoL dimensions, except for social relationships. Our data are in line with those reported by Hill et al. (2012) in an Australian sample. They found that perceived neighborhood problems were strongly and negatively predictive

of each of the health-related QoL domains (assessed through the WHOQoL- Brief Version), but the social relations dimension has a beta weaker than other QoL dimensions (.010 versus .001). Moreover, in our study the hierarchical regression model showed the worst fit for the social relations. We believe that this is due to the scale used. The Italian version of the subscale referring to the social relations dimension, which detects the perception of interpersonal relationships, consists of three items, one referring to personal relationships with others, one to support received from family members and the other to sexual life, and it is possible that these aspects, which express personal and private dimensions, do not intertwine with social and environmental aspects, such as neighborhood (with reference to Hill et al., 2012) and the sense of community (see our data). Although the full WHOQoL scale, consisting of 100 items, could perhaps resolve this problem, it is a much heavier instrument and there would be problems with its administration.

Our findings thus emphasize that in the environmental, psychological and social relationship domains, quality of life is better for people who live in small towns than for those who live in large towns. This is in line with the results of Cramer et al. (2004) and Fassio et al. (in press). Our findings were also congruent with an Italian study, involving a large sample of the national population, which reported a greater preference among Italians than among other Europeans for living in small towns (ISTAT, 2008). Further studies could investigate the reason for this preference: could it be because social relations are easier, or because these places are quieter, or because the style and pace of life are less frenetic?

Our data can obviously not be generalized: to that end, a larger sample would be required, encompassing other geographical areas too, along with more specific measures for particular characteristics of the area of residence.

Leaving aside these limitations and the caution they require, this study has shown that quality of life is influenced by various factors and, in particular, by objective dimensions (such as income, which is almost always significant) and psychological factors (e.g. sense of community).

In other words, as Shek (2010) suggests, QoL “is an important issue that has attracted the attention of researchers, practitioners, policy makers, and the public at large. Throughout different stages of the family life cycle, we are facing many issues related to quality of life. With the growing knowledge-based economy and fluctuation in the global economy, it is timely to ask how we can live a “quality life” and promote quality of life in a turbulent and rapidly changing global ecology. With such changing macro landscapes, it is definitely necessary to conduct more QOL research to examine the related issues” (p.371).

In our opinion, connecting studies on sense of community, environmental characteristics and quality of life that go beyond a perspective focused on disease and pathology could be very fruitful. “If mental health continues to be the desired goal, then the ultimate focus of community psychology continues to lie within the individual; and this runs contrary to models that focus on community well-being” (Graham & Ismail, 2011, p. 132). Furthermore, this perspective could be of great interest for policy-makers in the field of social and health service management, because if it is clear that quality and style of life differ according to the characteristics and dimensions of the environment, this could affect the organization of health and social services, so that health policies can be tailored to specific needs and life situations.

REFERENCES

- Ahern, M.M., Hendryx, M.S., & Siddharthan, K. (1996). The importance of Sense of Community on people's perceptions of their health-care experiences. *Medical Care, 34*, 911-923.
- Altman, I., & Low, S.M. (1992). *Place attachment. A conceptual inquiry*. New York, NY: Plenum Press.
- Annett, H., & Nickson, P.J. (1991). Community involvement in health: Why is it necessary? *Tropical Doctor, 2*, 3-5.
- Atkinson, S., Fuller, S., & Painter, J. (eds.) (2012). *Wellbeing and Place*. Farnham, UK: Ashgate.
- Bachrach, K.M., & Zautra, A.J. (1985). Coping with a community stressor: The threat of a hazardous waste facility. *Journal of Health and Social Behaviour, 26*, 127-141.
- Baum, F.E., Ziersch, A. M., Zhang, G., & Osborne, K (2009). Do perceived neighbourhood cohesion and safety contribute to neighbourhood in health? *Health & Place, 15*, 925-934.
- Boekaerts, M., Maes, S., & Karoly, P. (2005). Self-Regulation Across Domains of Applied Psychology: Is there an Emerging Consensus? *Applied Psychology, 54*, 149-154.
- Bonaiuto, M., Fornara, F., Aiello, A., & Bonnes, M. (2002). La qualità urbana percepita [The perceived urban quality] In M. Prezza & M. Santinello (Eds.). *Conoscere la comunità* (pp.133-160). Bologna: Il Mulino.
- Bonaiuto, M., Fornara, F., & Bonnes, M. (2006). Perceived residential environment quality in middle-and low-extension Italian cities. *Revue Européenne de Psychologie Appliqué, 56*, 23-34.
- Brown, B., Perkins, D., & Brown, G. (2003). Place attachment in a revitalizing neighbourhood: Individual and block levels of analysis. *Journal of Environmental Psychology, 23*, 259-271.
- Camfield, L., & Skevington, S.M. (2008). On subjective well-being and quality of life. *Journal of Health Psychology, 13*, 764-775.
- Chavis, D.M., Hogge, J.H., McMillan, D.W., & Wandersman, A. (1986). Sense of community through Brunswik's lens: A first look. *Journal of Community Psychology, 14*, 24-40.

- Cramer, V., Torgersen, S., & Kringlen, E. (2004). Quality of life in a city: The effect of population density. *Social Indicators Research*, *69*, 103-116.
- Cummins, R.A. (2000). Objective and subjective quality of life: an interactive model. *Social Indicators Research*, *52*, 55-72.
- Cummins, R.A., & Nistico, H. (2002). Maintaining life satisfaction: The role of positive cognitive bias. *Journal of Happiness Studies*, *3*, 37-69.
- Davidson, W.B., & Cotter, P.R. (1986). Measurement of Sense of Community Within the Sphere of City. *Journal of Applied and Social Psychology*, *16*, 608-619.
- Davidson, W.B., & Cotter, P.R. (1991). The relationship between sense of community and subjective well-being: A first look. *Journal of Community Psychology*, *19*, 246-253.
- De Girolamo, G. (2001). Il WHOQOL-100. In De Girolamo G. (Ed.) WHOQOL, *Salute e Qualità della Vita*, [WHOQOL, health and QoL] (pp. 5-39). Torino: CSE.
- De Girolamo, G., Becchi, M. A., Coppa, F. S., De Leo, D., Neri, G., Rucci, P., & Scocco, P. (2001). (eds.) *Il WHOQOL e Salute e Qualità della Vita*, [WHOQOL, health and QoL] CSE, Torino.
- Dohrenwend, B. S. (1978). Social stress and community psychology. *American Journal of Community Psychology*, *6*, 1-14.
- Farrell, S.J., Aubry, T., & Coulombe, D. (2004). Neighborhoods and neighbors: Do they contribute to personal well-being?. *Journal of Community Psychology*, *32*, 9-25.
- Fassio, O., Rollero, C., & De Piccoli, N. (in press). Health, quality of life and population density: A preliminary study on “contextualized” quality of life. *Social Indicators Research*, *110*, 479-488.
- Fried, M. (1963). Grieving for a lost home. In L. Duhl (Ed.) *The Urban Condition*. (pp. 151-171). New York: Basic Books.
- Fried, M. (2000). Continuities and discontinuities of place. *Journal of Environmental Psychology*, *20*, 193-205.

- Frohlich, K.L., Corin, E., & Potvin, L. (2001). A Theoretical proposal for the relationship between context and disease. *Sociology of Health and Illness*, 23, 776-797.
- Giuliani, M.V. (2003). Theory of attachment and place attachment. In M. Bonnes, T. Lee, & M. Bonaiuto (Eds.) *Psychological theories for environmental issues* (pp. 137-170). Aldershot: Ashgate
- Graham, T.M., & Ismail, T. (2011). Content and method trends in the Journal of Community Psychology between 2003 and 2007. *Journal of Community Psychology*, 39, 121-135.
- Gusfield, J. R. (1975). *The community: a critical response*. New York: Harper Colophon.
- Hall, E.T. (1966). *The hidden dimension*. NY: Doubleday, Garden City.
- Hawthorne, G., Herrman, H., & Murphy, B. (2006). Interpreting the WHOQOL-Brief: preliminary population norms and effect sizes. *Social Indicators Research*, 77, 37-59.
- Hernández, B., Hidalgo, M.C., Salazar-Laplace, M.E., & Hess, S. (2007). Place attachment and place identity in natives and non-natives. *Journal of Environmental Psychology*, 27, 310-319.
- Hidalgo, M.C., & Hernández, B. (2001). Place attachment: Conceptual and empirical questions. *Journal of Environmental Psychology*, 21, 273-281.
- Hill, E.M., Shepherd, D., Welch, D., Dirks, K.N., & McBride, D. (2012). Perceptions of neighbourhood problems and health-related quality of life. *Journal of Community Psychology*, 40, 7, 814-827.
- Hummon, D.M. (1992). Community Attachment: local sentiment and sense of place. In L. Altman, & S.M. Low (Eds.) *Place Attachment* (pp. 253-278). New York: Plenum.
- Husserl, E. (1954). *Die Krisis der Europäischen Wissenschaften und die transzendente Phänomenologie: eine Einleitung in die Phänomenologische Philosophie* [The Crisis of European Sciences and Transcendental Phenomenology: an Introduction to Phenomenological Philosophy] Den Haag: Nijhoff.
- ISTAT (The Italian National Institut of Statistics) (2008). *The state of the Nation in 2007*; Roma, Istat.

- Jorgensen, B.S. & Stedman, R.C. (2001). Sense of place as an attitude: Lakeshore owners' attitudes toward their properties. *Journal of Environmental Psychology*, 21, 233-248.
- Knez, I. (2005). Attachment and identity as related to a place and its perceived climate. *Journal of Environmental Psychology*, 25, 207-218.
- Kagan, C., Burton, M., Duckett, P., Lawthon, R., & Siddiquee, A. (2011). *Critical Community Psychology*, Blackwell, Padstow, Cornwall.
- Kawachi, I., & Berkman, L.F. (2003). *Neighborhoods and health*, New York: Oxford University Press.
- Kingston S., Mitchell, R., Florin P., & Stevenson, J. (1999). Sense of Community in Neighborhoods as a multi-level construct. *Journal of Community Psychology*, 27, 6, 681-694.
- Lewicka, M. (2005). Ways to make people active: The role of place attachment, cultural capital, and neighbourhood ties. *Journal of Environmental Psychology*, 25, 381-395.
- Li, Y.P., Lin, S.I., & Chen, C.H.(2011). Gender differences in the relationship of social activity and quality of life in community-dwelling Taiwanese elders. *Journal of Women & Ageing*, 23, 305-320.
- Macintyre, S., Maciver, S., & Sooman, A. (1993). Area, class and health: should we be focussing on places or people? *Journal of Social Policy*, 22, 213-234.
- Macintyre, S. & Ellaway, A. (2000). Ecological approaches: rediscovering the role of the physical and social environment. In L. Berkman & I. Kawachi (Eds.) *Social Epidemiology* (pp. 332-348). New York: Oxford University Press.
- Mainardi, R. (1998). *L'Italia delle Regioni. Il Nord e la Padania* (Italy of Regions: the North and Padania). Milano, IT: Mondadori.
- Manzo, L.C. (2003). Beyond house and haven: toward a revisioning of emotional relationships with place. *Journal of Environmental Psychology*, 23, 47-61.
- Marmot, M. (2004). *Status Syndrome: How your social standing directly affects youth health and life expectancy*. London: Bloomsbury Publishing.

- McMillan, W.D. (1976). Sense of community: An attempt to definition. Unpublished manuscript, Nashville, TN: George Peabody College.
- McMillan, W.D., & Chavis, M.D. (1986). Sense of community: A definition and theory. *Journal of Community psychology, 14*, 6-22.
- Moos, R.H. (2002). The Mystery of Human Context and Coping: An Unraveling of Clues. *American Journal of Community Psychology, 30*, 1, 167-88.
- Ortolani, M. (1984). *La geografia delle sedi*, Piccin Nuova Libreria, Padova.
- Parker, E.A., Lichtenstein, R.L., Schulz, A.J., Israel, B.A., Schork, M.A., Steinman, K.J., & James S.A. (2001) Disentangling Measures of Individual Perceptions of Community Social Dynamics: Results of a Community Survey. *Health Education and Behavior, 28*, 462-486.
- Parkes, A., & Kearns A. (2006). The multi-dimensional neighbourhood and health: a cross-sectional analysis of the Scottish Household Survey. 2001. *Health and Place, 12*, 1-18.
- Perkins, D., Florin, P., Rich, R., Wandersman, A., & Chavis, D. (1990). Participation and the social and psychological environment of residential blocks: Crime and community context. *American Journal of Community Psychology, 18*, 83-115.
- Peterson, L.E., Tsai, A.C., Petterson, S. & Litaker, D.G. (2009). Rural-urban comparison of contextual associations with self-reported mental health status. *Health & Place, 15*, 125-132.
- Peterson, N.A., Speer, P.W., & McMillan, D.W. (2008). Validation of a Brief sense of Community Scale: Confirmation of the Principal Theory of Sense of Community. *Journal of Community Psychology, 36*, 61-73.
- Pretty, G.H., Conroy, C., Dugay, J., Fowler, K., & Williams, D. (1996). Sense of community and its relevance to adolescents of all ages. *Journal of Community Psychology, 24*, 365-380.
- Prezza, M., Amici, M., Roberti, T., & Tedeschi, C. (2001). Sense of community referred to the whole town: Its relations with neighboring, loneliness, life satisfaction and area of residence. *Journal of Community Psychology, 29*, 29-52.

- Prezza M., & Costantini, S. (1998). Sense of Community and Life Satisfaction: Investigation in three different territorial context. *Journal of Community & Applied Social Psychology* 8: 181-194.
- Prezza, M., Costantini, S., Chiarolanza, V., & Di Marco, S. (1999). La scala italiana del senso di comunità [The Italian scale of sense of community]. *Psicologia della salute*, 3/4, 135-158.
- Puddifoot, J.E. (1995). Dimensions of community identity. *Journal of Community and Applied Social Psychology*, 5, 337-370.
- Riger, S., & Lavrakas, P. (1981). Community ties: Patterns of attachment and social interaction in urban neighborhoods. *American Journal of Community Psychology*, 9, 55-66.
- Rollero, C., & De Piccoli, N. (2010a). Does place attachment affect social well-being? *European Review of Applied Psychology*, 60, 233-238.
- Rollero, C., & De Piccoli, N. (2010b). Place attachment, identification and environment perception: An empirical study. *Journal of Environmental Psychology*, 30, 198-205.
- Sarason, S.B. (1974). *The psychological sense of community. Prospects for a community psychology*, San Francisco: Calif., Jossey-Bass.
- Shek, D.T.L. (2010). Quality of life research: Responses to emerging issues in a changing world. *Social Indicators Research*, 100, 371-374.
- Skevington, S.M. (2010). Qualities of life, educational level and human development: an international investigation of health. *Social Psychiatry and Psychiatric Epidemiology*, 45, 999-1009.
- Sing-Manoux, A (2003) Psychosocial factors and public health. *Journal of Epidemiological Community Health*, 57, 553-554.
- Sirgy, M.J. (2011). Theoretical perspectives guiding QOL indicator projects. *Social Indicators Research*, 103, 1-22.
- Stokols, D., & Shumaker, S.A. (1981). People in places: A transactional view of settings. In J. Harvey (Ed.) *Cognition, social behaviour and the environment*. New Jersey: Erlbaum.

- Tarkowski, S. (2009). Human ecology and public health. *European Journal of Public Health, 19*, 447.
- Trentini, C.M., Chacamovich, E., Peretti Wagner, G., Müller, D.H., Hirakata, V.N., & De Almeida Fleck, M.P. (2011). Quality of life (QoL) in a Brazilian sample of older adults: The role of sociodemographic variables and depression symptoms. *Applied Research in Quality of Life, 6*, 291-309.
- Trickett E.J., & Rowe H. L. (2012). Emerging Ecological Approaches to Prevention, Health Promotion, and Public Health in the School Context: Next Steps From a Community Psychology Perspective. *Journal of Educational and Psychological Consultation, 22*, 125-140.
- Tuan, Y.F. (1974). *Topophilia: A Study of Environmental Perception, Attitudes and Values*. Prentice-Hall, Englewood Cliffs.
- Wallace, L.S., DeVoe, J.E., Bennett, I.M., Roskos, S:E., & Fryer, G:E: jr. (2008). Perceptions of healthcare providers' communication skills: do they differ between urban and non-urban residents? *Health & Place, 14*, 653-660.
- Wen, M., Hawkey, L.C., & Cacioppo, J.T. (2006). Objective and perceived neighbourhood environment, individual SES and psychosocial factors, and self-rated health: An analysis of older adults in Cook County, Illinois. *Social Science and Medicine, 63*, 2575-2590.
- WHOQOL Group (1995). The World Health Organization Quality of Life Assessment (WHOQOL): position paper from the World Health Organization. *Social Science and Medicine, 41*, 1403-1409.
- WHOQOL Group (1998). Development of the World Health Organization WHOQOL-BREF Quality of Life Instrument. *Psychological Medicine, 28*, 551-558.
- Wilkinson, R., & Pickett, K. (2009). *The spirit level. Why more equal societies almost always do better*. Penguin Books, London.

Wilson, K., Elliott, S., Law, M., Eyles, J., Jerrett, M., & Keller-Olaman, S. (2004). Linking perceptions of neighbourhood to health in Hamilton, Canada. *Journal of Epidemiological Community Health*, 58, 192-198.

Risposte ai referee sulla parte di analisi dei dati:

Osservazione 1 (Concerning analyses, a multivariate analysis is preferable before testing separately...):

Risposta (a): May be that there was a misunderstanding with regards the statistical pathway: the comparisons through T-test were carried out to preliminary assess the existence of association between our dependent variables and each of the 3 predictors of concern (i.e. sense of community, place attachment, small vs. large town); after that those predictors were included in the multivariate regression models.

Risposta (b): As the bivariate comparisons based on T-tests actually do not provide any added value, in the current version of the paper those results were eliminated.

Osservazione 2 (Clarify how income and marital status have been entered into the regression equation): both variables have been entered into the regression equation as dummy variables. We have also expanded footnote 2, specifying the reference variables.

Osservazione 3: Table 1 the headings of the columns do not correspond to the names of the WHOQoL scales: we have correct the column headings.