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Different Predictors of Quality of Life in Urban Environment

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Different Predictors of Quality of Life in Urban Environment

The present study aimed at comparing the effects of different sets of predictors on quality of life in an urban environment. We used secondary data collected by means of a self-report questionnaire on a sample of 343 residents of a big Italian city. The questionnaire included a multidimensional scale elaborated by the World Health Organization (WHOQoL brief scale) assessing quality of life in terms of four different evaluations concerning distinct aspects of life: physical health; psychological status; social relationships; environment. Four different types of predictors were considered: (1) socio-demographic characteristics; (2) quality of social relations (perceived social support); (3) place attachment; (4) healthy lifestyle. To test the influence of different groups of predictors on the dimensions of WHOQoL we performed four hierarchical regression analyses. Several significant influences were found. In particular the results pointed out the great role of perceived social support and place attachment in promoting quality of life. That result suggests the importance of community interventions in urban environment.

Keywords Quality of life, Perceived social support, Place attachment, Urban environment, WHOQoL brief scale.

1 Introduction

The Biopsychosocial model (Engel, 1977) considers health a combination of biological, psychological, and social factors following the World Health Organization (WHO) definition of health as “a state of complete physical, mental and social well-being’’ and not just as the absence of disease. On the grounds of this medical model, in the last decades psychosocial research focused on the link between physical and mental health and psychological variables such as subjective well-being (Lent, 2004) and satisfaction with life (Diener, Emmons, Larsen, & Griffin, 1985). A great

amount of empirical results proved that these subjective evaluations contribute to health and longevity (for a review see Diener & Chan, 2011).

Besides psychological variables, other factors should be taken into account addressing quality of life topic. They concern objective and subjective individual, interpersonal, and contextual aspects (Cummins 2000).

WHO defined Quality of life as ‘‘individuals’ perception 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). On these grounds was developed a specific instrument assessing quality of life in terms of four different evaluations concerning distinct aspects of everyone’s life: Physical health; Psychological Status; Social Relationships; Environment. This instrument was translated in several language and applied in many different countries (i.e. Bayram, Bilgel, & Bilgel, 2012; Li, Kay, & Nokkaew, 2009; Lucas-Carrasco, 2012; Yao, Wu, 2009).

Different dimensions of quality of life mean also different predictors for each dimension. Actually literature on quality of life pointed out the role of various kind of variables. First of all the socio-demographic characteristics. In particular in several studies low income was related to low quality of life indexes (De Girolamo, 2001; Fassio, Rollero, & De Piccoli, 2012; Marmot, 2004). Results concerning age are not so univocal. Some study reported that age is inversely related with physical and psychological quality of life (De Girolamo 2001) but others did not find this relation (Fassio et. al., 2012). Gender is usually related to subjective evaluation of physical health and psychological status. Women have higher rates of negative affect and depression and poorer subjective health than men (Crimmins, Kim, & Solè-Aurò, 2010; Prus, 2011; Tesch-Römer, Motel-Klingebiel, & Tomasik, 2008).

A second group of predictors of quality of life is the capability of social environment to support individuals. Social support from family, friends, and partner is important to cope with traumatic events like serious illness (Coughlin, 2008), to face ordinary life events like motherhood (Dyrdal,

Røysamb, Nes, & Vittersø, 2011) and in general to have a good level of quality of life (Heller, Watson, Ilies, 2006).

Also the relation with the environment is important, both Sense of Community (Prezza & Costantini, 1998) and Place Attachment (Rollero & De Piccoli, 2010) are predictors of well-being. Finally the health conditions are related to the whole quality of life. The absence of disease increases quality of life (Fassio et. al. 2012; Michalos, Zumbo, & Hubley 2000) and also healthy activities, i.e. a physically active lifestyle, have positive effects on physical health, both direct and indirect helping lowering perceived stress and its negative effects (Rueggeberg,Wrosch, & Miller, 2012). The quality of sleep too is a predictor of quality of life (Sasai, Inoue, Komada, Nomura, Matsuura, & Matsushima 2010).

Present study aims at comparing the effects of different predictors on the four dimensions of quality of life as operationalized by the WHO (WHOQoL Group 1998). The data were collected in a big city and refers only to this kind of living environment. Besides considering quality of life a multidimensional variable we must also assume that the relations among dimensions of quality of life and other variables are not independent from the place where people live and their human and concrete resources. For instance previous studies demonstrated that quality of life is affected by the population density (Fassio et. al. 2012). We do not want to affirm that quality of life structure is different in different context but the relative importance of their predictors could vary. For these reasons we limit the range of our analysis to the quality of life in urban environment. Four different types of predictors were considered: (1) socio-demographic characteristics (gender, age, educational level, income); (2) quality of social relations (Perceived social support); (3) place attachment; (4) healthy lifestyle (physically active lifestyle, satisfactory sleep).

On the ground of previously cited literature, we expected that (a) socio-demographic characteristics influence all the dimensions of WHOQoL; (b) perceived social support influences Physical Health, Psychological Status, and Social Relationships; (c) place attachment influences Social Relationships and Environment; (d) healthy lifestyle influences Physical Health.

2 Method

2.1 Participants

The study was conducted in Turin, a city of about one million inhabitants located in the north-west of Italy. Data here presented are part of those collected for a survey carried out on the population of a district of the city. The survey investigated quality of life and other social indicators. The participants were contacted among the residents of several residential buildings within the district. The study involved 343 participants (40.5% male, 59.5% female). Their average age was 38.19 years (SD = 17.35). 27.7% were college graduates, 39.7% high-school graduates, and 32.6% had a lower educational level; 50.0% had never been married, 35.9% were married, 9.7% were divorced and 4.4% widows. Concerning employment position, 48% of subjects were workers, 26.1% were students, 11.1% were retired and 14.7% did not work. 29.1% of the participants had a low family income (less than 1200 € per month) whereas 19.6% had an high family income (more than 3000 € per month).

2.2 Measures

Data were gathered by means of a self-report questionnaire including different set of indicators. The indicators used in our analysis are:

1. The Italian version of WHO Quality of Life brief Scale (WHOQoL Group 1998; De Girolamo 2001) including 24 items rated on a 5-point Likert-type scale belonging to four subscale measuring Physical health (Cronbach's $\alpha = .78$), Psychological Status ($\alpha = .76$), Social Relationships ($\alpha = .64$), and Environment ($\alpha = .76$). The mean scores of each subscale were then multiplied by 4 to make them comparable with those used in the WHOQoL-100.
2. Multidimensional Scale of Perceived Social Support (MSPSS; Zimet, Dahlem, Zimet, & Farley 1988) composed by three subscales each one including 4 items rated on a 7-point

Likert-type scale; the first subscale measures perceived support from Family (α = .93) the second from Friends (α = .94) and the third one from a Significant Other (α = .94).

3. the Residential Attachment Scale (Bonaiuto, Fornara, &. Bonnes, 2006), including 8 items rated on a 4-point Likert-type scale (α = .85).
4. Two items investigating active lifestyle and quality of sleep: "how many times a week do you perform a physical activity that makes you sweat? (e.g., jogging, cycling, swimming, gym ...)?" and "Do you think that your daily hours of sleep are sufficient?".
5. A brief list of socio-demographic items.

We contacted participants directly at home; questionnaire completion took about 20 minutes. To test the influence of different groups of predictors on the dimensions of WHOQoL we performed hierarchical regression analyses.

3 Results

3.1 Descriptive statistics

Before regression analyses we performed descriptive statistics of dependent and independent variables. In table 1 are reported means and standard deviations of the subscales of WHOQoL, the subscales of MSPSS, and of the residential attachment scale. Table 2 presents the correlation indexes among scales. All the dimensions of quality of life, perceived social support, and place attachment are correlated. Concerning healthy lifestyle participants perform physical activities on average 1.28 times a week (SD = 1.71) and 52.4% of the participants affirmed that their daily hours of sleep are sufficient.

3.2 Hierarchical regression analyses

To verify our hypotheses we performed four multiple regression analyses in which the four dimensions of WHOQoL were regressed onto different groups of predictors. In all the models the predictors were entered in the analysis in four steps. In the first step we entered socio-demographic

characteristics: gender (0 = male; 1 = female), age, years of education, and low family income (0 = more than 1200 € per month; 1 = less than 1200 € per month). In the second step perceived social support was entered using the three subscale of MSPSS. Then in the third step was entered the score of the Residential Attachment Scale. Finally in the last step the healthy lifestyle variables were entered: physical activity (number of times a week performing physical activity) and quality of sleep (0 = sleep not sufficient; 1 = sleep sufficient).

The Physical Health dimension of quality of life (see table 3) was positively influenced by perceived social support from family (β = .16) and from friends (β = .14), Residential Attachment (β = .20), practising physical activity (β = .15) , and having a sufficient amount of sleep (β = .12); the low family income (β = -.11) had a negative influence on Physical Health.

Psychological Status (table 4) was positively influenced by years of education (β = .12), perceived social support from family (β = .15) and from friends (β = .14), Residential Attachment (β = .20), and having a sufficient amount of sleep (β = .15); two predictors had a negative impact on Psychological Status: being female (β = -.13) and a low family income (β = -.14).

The significant predictors of Social Relationship dimension of WHOQoL (table 5) were perceived social support from friends (β = .42) and from significant other (β = .22), and Residential Attachment (β = .12).

Finally Environment scale of the WHOQoL was influenced positively by years of education (β = .14), perceived social support from friends (β = .21), and Residential Attachment (β = .19) whereas low family income exercised a negative influence (β = -.22) (see table 6).

4. Discussion

Present study aimed at comparing the effects of different predictors on the four dimensions of the WHOQoL. As expected we found different influences on the various component of quality of life. Concerning socio-demographic variables the income resulted the main predictor of quality of life. The low family income influenced negatively three out of four dimensions of quality of life, only

social relationships were not affected by this variable. This result is consistent with previous literature (Campbell and Jovchelovitch 2000; Fahey and Whelan 2005; Fassio et. al, 2012; Michalos et al. 2000) and once more points out the fact that economic condition is very important for the subjective perception of quality of life. This could be especially true during period of crisis, when the economic expectations predict life satisfaction (Rollero & Tartaglia, 2009). Also educational level had an impact on quality of life. Specifically on psychological status and on environment dimensions. Higher psychological distress in people with low educational level have been found in several researches (Dalgard, Mykletun, Rognerud, & Zahl, 2007; Melzer, Fryers, & Jenkins, 2004). Concerning environment we think that education together with income determine the status of a person that influences the quality of living conditions. Females had lower values of psychological status, this is consistent with other studies where women reported more negative emotions than men (Hansson, Hillerås, & Forsell, 2005; Tesch-Römer et al., 2008).

Age seems to be completely irrelevant in predicting the four dimensions of quality of life, this could sound a little bit "strange", especially for physical health, but it is not a new result. In literature there are studies that found a relation between age and quality of life (De Girolamo 2001) but others did not find this relation (Fassio et. al., 2012). It is possible that the absence of relation in our study it is due to some characteristic of the sample. The participants are well distributed across age cohorts, their age ranges from 19 to 89 years (M = 38.19 years; SD = 17.35), but it is possible that because of the way of recruitment (participation was voluntary) we interviewed an healthy population. Sick persons maybe did not participate to the survey. So it is possible that we underestimated the effects of health problems in the elderly. We can't verify this interpretative hypothesis because in our dataset we do not have health condition indicators. Further research is needed.

Perceived social support influenced all the dimensions of quality of life and did it in different ways. Physical health and psychological status were influenced by the perceived support from family and friends but not by the perceived support from a significant other. Social relationships dimension

was influenced by perceived support from friends and significant other. Environment dimension of quality of life was influenced only by perceived support from friends. To sum up, the support from friends is important for all the aspects of quality of life whereas family is important for the individual dimensions (physical and psychological) and significant other for the relational one. Place attachment influenced quality of life more than we expected. All the dimensions of WHOQoL were influenced by this variable. Finally, as expected, the active lifestyle and the quality of sleep affected positively physical health. The quality of sleep is also a predictor of Psychological status.

In general our results support the importance for the individual quality of life of the environment, both social and physical, in which is involved the person. This is not a new results (Heller et. al, 2006; Rollero & De Piccoli, 2010) but the use in present study of multidimensional indicators (WHOQoL and MSPSS) allowed us to better understand the extent of this relation. Supporting social relations and a strong tie with the place of living, that it is also an human environment, predicted high rates on all the dimensions of quality of life. This fact underlines the utility of community interventions to increase quality of life in the urban environments. Obviously we do not want to deny the importance of other kind of intervention, but the largeness of the impact of social factors on all the dimensions of quality of life (also physical health) suggests that interventions fostering the development of social networks and local bonds could have a good benefit-cost ratio.

These results are not generalizable to small cities and villages, as yet pointed out by several studies (Fassio et. al, 2012; Kawachi & Berkman 2003; Strasser, 2003) health and quality of life vary among rural and urban areas. For this reasons the fact that the prediction models of quality of life are stable among different places of residence should be demonstrated with ad hoc studies.

The main limit of the present study was the use of secondary data. Important predictors of quality of life were not investigated, including other variables in the analysis could reduce the importance of social support and place attachment we found. In future research we could insert for instance health condition indicators (i.e. chronic diseases or other physical problems) that could affect physical health dimension (Fassio et. al. 2012; Michalos et. al., 2000). Other variables that should be

investigated are the characteristics of the family of the participants (i.e number of sons, parents living or not, health problems of the relatives) because of the importance that family has for quality of life (Rollero & Tartaglia, 2009). Further research is needed to test a more complete model of prediction of quality of life in urban environment. Finally, to actually test the effect of social support and place attachment development on quality of life could be useful to plan quasi-experimental designs testing the efficiency of real community interventions.

References

Bayram, N., Bilgel, F., & Bilgel, N.G. (2012). Social exclusion and quality of life: An empirical study from Turkey. *Social Indicators Research, 105*(1), 109-120.

Bonaiuto, M.,Fornara, F., & Bonnes, M. (2006). Perceived residential environment quality in middle- and low-extension Italian cities. *European Review of Applied Psychology*, *56*, 23–34.

Campbell, C., & Jovchelovitch, S. (2000). Health, community and development: Towards a social psychology of participation. *Journal of Community & Applied Social Psychology, 10*, 255–270.

Coughlin, S. S. (2008). Surviving cancer or other serious illness: a review of individual and community resources. *Cancer Journal for Clinicians*, *58*(1), 60-64.

Crimmins, E.M., Kim, J.K., & Solé-Auró, A. (2010). Gender differences in health: Results from SHARE, ELSA and HRS. *European Journal of Public Health, 21*(1), 81-91.

Cummins, R. A. (2000). Objective and subjective quality of life: An interactive model. *Social Indicator Research, 52*, 55–72.

Dalgard, O.S., Mykletun, A, Rognerud, M., & Zahl P.H. (2007). Education, sense of mastery and mental health: results from a nation wide health monitoring study in Norway. *BMC Psychiatry*, **7**

De Girolamo, G. (2001). Il WHOQOL-100. In G. De Girolamo (Ed.), WHOQOL, Salute e Qualita` della Vita [WHOQOL, health and QoL] (pp. 5–39). Torino: CSE.

Diener, E., Chan, M.Y. (2011). Happy People Live Longer: Subjective Well-Being Contributes to Health and Longevity. *Applied Psychology: Health and Well-Being, 3* (1), 1-43.

Diener, E., Emmons, R. A., Larsen, R. J., & Griffin, S. (1985). The Satisfaction with Life Scale. *Journal of Personality Assessment*, *49*, 71-75.

Dyrdal, G.M., Røysamb, E., Nes, R.B., & Vittersø, J. (2011). Can a Happy Relationship Predict a Happy Life? A Population-Based Study of Maternal Well-Being During the Life Transition of Pregnancy, Infancy, and Toddlerhood. *Journal of Happiness Studies, 12* (6), 947-962.

Engel, G.L. (1977). The need for a new medical model: a challenge for biomedicine. *Science, 8*, 129-136.

Fahey, T., & Whelan, C. T. (2005). *First European quality of life survey: Income inequalities and deprivation.* Luxembourg: Office for Official Publication of the European Communities.

Fassio, O., Rollero, C., & De Piccoli, N. (2012). Health, Quality of Life and Population Density: A Preliminary Study on ‘‘Contextualized’’ Quality of Life. *Social Indicators Research, Online First,* 28 January 2012

Hansson, A., Hillerås, P., & Forsell, Y. (2005). Well-being in an adult Swedish population. *Social Indicators Research, 74*(2), 313-325.

Heller, D., Watson, D., & Ilies, R. (2006). The Dynamic Process of Life Satisfaction. *Journal of Personality, 74*(5), 1421-1450.

Kawachi, I., & Berkman, L. F. (2003). *Neighborhoods and health*. New York: Oxford University Press.

Lent, R.W. (2004). Toward a Unifying Theoretical and Practical Perspective on Well-Being and Psychosocial Adjustment. *Journal of Counseling Psychology, 51* (4), 482-509.

Li, K., Kay, N.S., & Nokkaew, N. (2009) The performance of the World Health Organization's WHOQOL-BREF in assessing the quality of life of Thai college students. *Social Indicators Research, 90*(3), 489-501.

Lucas-Carrasco, R. (2012). The who quality of life (WHOQOL) questionnaire: Spanish development and validation studies. *Quality of Life Research: An International Journal of Quality of Life Aspects of Treatment, Care & Rehabilitation, 21*(1), 161-165.

Marmot, M. (2004). *The status syndrome: How social standing affects our health and longevity*. New York: Times Book.

Melzer D, Fryers T, & Jenkins R (2004). Social inequalities and the distribution of the common mental disorders. In Maudsley Monograph. Volume 44. Psychology Press, Hove & New York.

Michalos, A. C., Zumbo, B. D., & Hubley, A. (2000). Health and quality of life. *Social Indicators Research, 51*, 245–286.

Prezza, M., & Costantini, S. (1998). Sense of community and life satisfaction: Investigation in three different contexts. *Journal of Community and Applied Social Psychology, 8*, 181–194.

Prus, S.G. (2011). Comparing social determinants of self-rated health across the United States and Canada. *Social Science & Medicine, 73*(1), 50-59.

Rollero, C., & De Piccoli, N. (2010). Does place attachment affect social well-being? *European Review of Applied Psychology, 60*, 233–238.

Rollero, C., & Tartaglia, S. (2009). Preserving life satisfaction during the economic crisis. Which factors can help? *Psicologia Politica*, *39*, 75-87.

Rueggeberg, R., Wrosch, C., & Miller, G.E. (2012). The Different Roles of Perceived Stress in the Association Between Older Adults' Physical Activity and Physical Health. *Health Psychology, 31* (2), 164-171.

Sasai, T., Inoue, Y., Komada, Y, Nomura, T., Matsuura, M., & Matsushima, E. (2010). Effects of insomnia and sleep medication on health-related quality of life. *Sleep Medicine, 11*(5), 452-457.

Strasser, R. (2003). Rural health around the world: Challenges and solutions. *Family Practice*, 20, 457–463.

Tesch-Römer, C.; Motel-Klingebiel, A.; Tomasik, M.J. (2008). Gender Differences in Subjective Well-Being: Comparing Societies with Respect to Gender Equality. *Social Indicators Research*, *85*, 329-349.

WHOQOL Group. (1998). Development of the World Health Organization WHOQOL-BRIEF quality of life instrument. *Psychological Medicine, 28*, 551–558.

Yao, G. & Wu, C. (2009). Similarities and differences among the Taiwan, China, and Hong-Kong versions of the WHOQOL Questionnaire. *Social Indicators Research, 91*(1), 79-98.

Zimet, G. D., Dahlem, N. W., Zimet, S. G., & Farley, G. K. (1988). The Multidimensional Scale of Perceived Social Support. *Journal of Personality Assessment*, *52*, 30-41.

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TABLES

Table 1. Scales descriptive statistics.

	Mean	**Standard Deviation**
WHOQoL		
Physical health	14.39	2.49
Psychological Status	13.01	2.43
Social Relationships	13.78	3.20
Environment	12.41	2.38
MSPSS		
Family	5.07	1.72
Friends	4.79	1.70
Significant Other	5.35	1.73
Residential Attachment	2.81	.70

Table 2. Correlations among scales.

	WHOQoL				**MSPSS**		
	1	**2**	**3**	**4**	**5**	**6**	**7**
WHOQoL							
1. Physical health							
2. Psychological Status	.75**						
3. Social Relationships	.44**	.48**					
4. Environment	.58**	.57**	.35**				
MSPSS							
5. Family	.33**	.35**	.37**	.31**			
6. Friends	.29**	.30**	.54**	.30**	.49**		
7. Significant Other	.20**	.25**	.44**	.18**	.56**	.44**	
Residential Attachment	.30**	.34**	.23**	.29**	.25**	.16**	.17**

** $p < .01$

Table 3. Hierarchical regression analysis on WHOQoL Physical health.

Predictors	Step 1	Step 2	Step 3	Step 4
Gender (1= Female)	-.05	-.06	-.08	-.06
Age	-.09	-.02	-.05	-.04
Years of education	.18**	.11*	.10	.07
Family income (1 = low)	-.18**	-.14*	-.13*	-.11*
Perceived support from Family		.19**	.13*	.16*
Perceived support from Friends		.17**	.16**	.14*
Perceived support from Significant Other		-.02	-.03	-.01
Residential Attachment			.24**	.20**
Physical activity				.15**
Sleep (1 = sufficient)				.12*
R^2 (corrected)	.08	.14	.19	.22

** $p < .01$; * $p < .05$

Table 4. Hierarchical regression analysis on WHOQoL Psychological Status.

Predictors	Step 1	Step 2	Step 3	Step 4
Gender (1= Female)	-.12*	-.13*	-.15**	-.13**
Age	-.04	.05	.01	.01
Years of education	.22**	.15**	.14**	.12*
Family income (1 = low)	-.21**	-.16**	-.16**	-.14**
Perceived support from Family		.18**	.13*	.15**
Perceived support from Friends		.17**	.16**	.14**
Perceived support from Significant Other		-.04	-.03	-.04
Residential Attachment			.23**	.20**
Physical activity				.07
Sleep (1 = sufficient)				.15**
R^2 (corrected)	.13	.22	.26	.29

** $p < .01$; * $p < .05$

Table 5. Hierarchical regression analysis on WHOQoL Social Relationship.

Predictors	Step 1	Step 2	Step 3	Step 4
Gender (1= Female)	.06	.02	.01	.02
Age	-.15**	-.00	-.03	-.01
Years of education	.11	.01	.00	-.02
Family income (1 = low)	-.12*	-.03	-.03	-.02
Perceived support from Family		.02	-.01	.01
Perceived support from Friends		.43**	.43**	.42**
Perceived support from Significant Other		.22**	.21**	.22**
Residential Attachment			.13**	.12*
Physical activity				.08
Sleep (1 = sufficient)				.03
R^2 (corrected)	.04	.33	.34	.35

** $p < .01$; * $p < .05$

Table 6. Hierarchical regression analysis on WHOQoL Environment.

Predictors	Step 1	Step 2	Step 3	Step 4
Gender (1= Female)	-.08	-.09	-.10	-.10
Age	-.01	.06	.03	.04
Years of education	.22**	.16**	.15**	.14**
Family income (1 = low)	-.27**	-.23**	-.23**	-.22**
Perceived support from Family		.14*	.09	.10
Perceived support from Friends		.22**	.21**	.21**
Perceived support from Significant Other		-.03	-.04	-.04
Residential Attachment			.20**	.19**
Physical activity				.04
Sleep (1 = sufficient)				.04
R^2 (corrected)	.16	.23	.26	.26

** $p < .01$; * $p < .05$