

## Health and Environment: The Case of Elderly and the Earthquake

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### Abstract

Le Marche Region (IT) offers the most favourable environment for elderly. In fact, they constitute a large part of the local population, with more than four hundreds persons over 100 years old. The earthquakes, from 2016 to 2017, involved thousands of residents from the interior part of the Region, causing a variety of changes in their daily life. Data show that the elderly were strongly impacted by the situation, even though many interventions have been carried out to support them under the medical perspective.

Starting from a theoretical background, in which a life-span psychology approach is adopted to look at elderly age as a potential active period of new adaptations, the paper moves to an overview of the situation, showing the role of the environment on the psycho-physical balance of elderly people.

**Keywords:** physical health; social health; elderly; environment; earthquake.

### Introduction

#### The theoretical background

According to the life-span approach, each phase of a human's life can be characterized by moments of growth and decline, understood as joint and complementary processes (Erikson 1951; Levinson 1978; Baltes, Reese & Lipsitt 1980). Psychological development, in fact, is co-determined by a set of internal factors, of a biological type, but also influenced by historical, social, cultural living conditions, as well as family and environmental elements. As a result, the need for an interdisciplinary research approach is suggested, in which the procedural aspects and mutual interaction of the variables at stake are prioritised. Human psychic development appears to be marked in several stages of evolution, sometimes with aspects of continuity between them, and other times with elements of discontinuity. In the first case, the analysis of mature and intra-individual factors is favoured, the second one emphasises instead the impact of the coming and environmental causes on change and development.

The concept of life cycle assigns specific adaptation tasks to the period of old age and seniority, making more dynamic the representation of a vital phase normally thought as inactive, and helping to rethink the elderly as an active protagonist of the adaptations required by his condition of life and health. It is a phase in which several changes in adaptive function are possible, in close dependence with the personal history and the individual characteristics, but also with the surrounding environment, meaning the living space of each person in a physical, affective and social sense (Lewin 1935).

#### Le Marche as a long-lived region

Italy has always been among the longest-lived countries in the world and Le Marche region is one of the longest-lived regions in Italy. Given the high inter-individual variability that characterises people's health, the environment in which the inhabitants of Le Marche live must have characteristics in itself that promote a high quality of life. The table n°. 1 shows some data related to the population aged 60 and over, which reside in Le Marche, according to the last census of 2011.

Ancona Province	54.852	48.588	30.501	5.346	152	136.439/473.865	35
Ascoli Piceno Province	24.249	22.021	13.277	2.120	53	61.720/210.407	34
Fermo Province	19.607	18.652	11.404	1.853	50	51.566/174.857	34
Macerata Province	35.807	33.633	21.065	3.719	109	94.333/319.607	34
Pesaro and Urbino Province	41.585	35.174	21.535	3.923	105	102.322/362.583	35
Le Marche tot.	176.100	158.068	97.782	16.961	469	446380/1.541.319	34
<b>Età</b>	60-69 years old	70-79 years old	80-89 years old	90-99years old	100+years old	Tot./Tot. population	%

**Tab. 1:** Resident Population in Le Marche Region in 2011 per years old  
*ISTAT - Elaborazioni: Sistema Informativo Statistico Regione Marche*

As can be observed, in all provinces the elderly population makes up more than a third of the global population, with peaks affecting people over 80 years of age, a total of 115,212, and 469 people who have crossed the 100-year threshold. Le Marche Region is therefore a territory that seems perfectly compatible with longevity. In particular, the environment seems to be a support consistent with the phase-specific tasks of the later stages of human life, namely that integrity of the ego that can be translated as a possibility of feeling active and proactive, of representing oneself as playing an important role in the family and in the community.

### Elderly and earthquake: the events in the hinterland in Le Marche Region

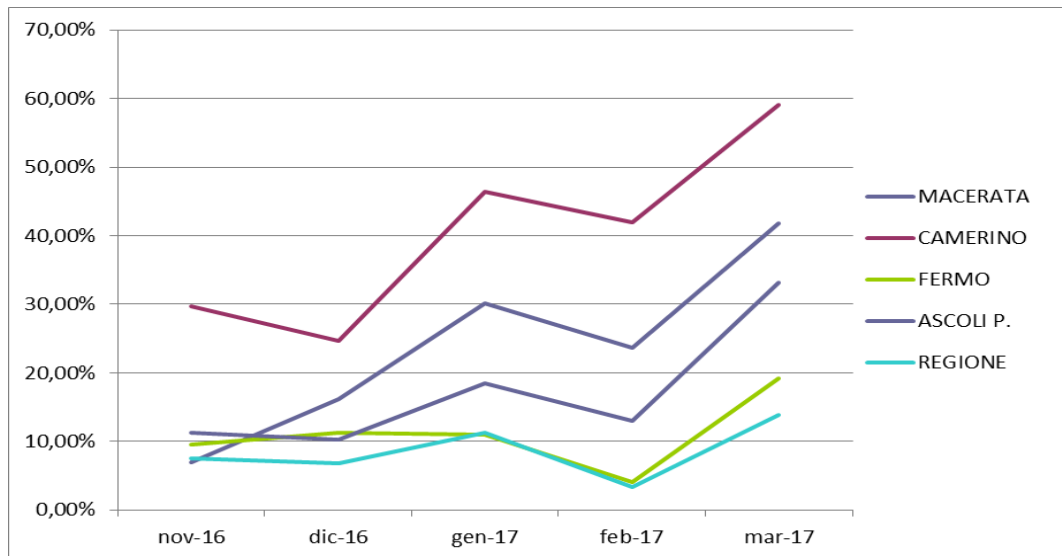
The dynamics of the earthquakes that shocked the population residing in the hinterland of Le Marche Region between 2016 and 2017, radically changed the situation in which many elderly people have actively lived almost their entire lives. At the end of 2017, the affected area, i.e. 85 municipalities with a total area of 3,978 343,578 sq km, has a population of about 4,000 fewer than in 2016.

According to the data of the Integrated Operating Room of Civil Protection, the population provided with basic assistance in Le Marche Region in the period from January 2017 to April 2017 is 702 people in the province of Ancona, 5018 in Ascoli Piceno Province, 1791 in the Province of in the Province of Macerata and 11 in the Province of Pesaro and Urbino.

The numbers for the Province of Macerata are impressive, especially considering that 20396 people have received assistance outside their homes, according to the data held by the Social Territorial Areas 16, 17 and 18 who have in charge the communities of Camerino, San Ginesio, Sanseverino Marche and the neighbouring municipalities. In particular, the 73% of the population living in the area of Camerino received out-of-home assistance, i.e. more than 10,000 people out of just over 14,000 residents.

Considering the inability of several protected structures scattered throughout the territory and evacuated, about 650 people assisted were relocated in emergency. Among these results a high number of elderly, as at least 8 facilities dedicated to their hospitality were found to be useless already from the first tremors. Many interventions, by operators who have worked in the affected territories, report an increase in the use of psycho-pharmaceuticals: between December 2015 and December 2016, there is an average variation of +6.0 %. The use of antipsychotics increased by 7.0%, that of antidepressants by 3.8% and that of benzodiazepines by 7.2%.

According to data provided by the Social Territorial Areas, spending on pharmaceutical items/drugs in the most-affected areas has shown a sharp increase. Variations from the total in Le Marche Region are clearly noticeable in the sampled municipalities. It is the case of the City of Camerino, one of the nearest to the epicentres.



**Graphic 1:** Spending on pharmaceutical items/drugs in Le Marche Region and in some municipalities close to the earthquake epicentres in the period November 2016 – March 2017

Many accesses to psychological support desks were traced, between those institutionally present and those specially located in earthquake zones. At the same time, in transient pathologies it did increase.

The death rate has also swirled, even though nobody died during the seismic events. The variation between November 2015 and November 2016, after the first 3 strong seismic events of August and October 2016, is distributed as follows amongst the provinces: Ancona and Pesaro, not particularly affected, did not register significant changes, Ascoli Piceno registered a variation of +12%, Fermo of +21% and Macerata of +15%. Considering the period between January 2016 and January 2017, which includes all the strongest seismic sequences, the increase is of 20% in the provinces of Ancona and Pesaro, of 50% in the Province of Ascoli Piceno, of 52% in the Province of Fermo, and of 53% in the Province of Macerata. Indirect effects of the emergency and the resulting actions have to be considered, to comprehend this phenomenon.

### Discussion

Taking into account the distribution of the population by age groups in Le Marche Region and the above data and graphs, it clearly appears that elderly have been the part of citizens which has been most affected by the consequences of earthquakes. Relocation, while providing better physical safety, has radically changed daily lifestyles and habits. The elderly, whether they have remained in their own territories or have moved to less affected locations, have nevertheless lost many of the dimensions useful to the quality of their lives and, moreover, suffered aggravating situations: uprooting from their own homes; protective community lifestyles; the flight of many carers dedicated to them, resulting in disorientation in the autonomous areas; the stress generated by fear, change, new forced cohabitation and housing insecurity; social and health care dispersed on multiple structures far from the context of belonging with difficulties of access to care and the possibility of frequent attendance by family members; cohabitation in collective housing units (first containers, then

emergency housing solutions) with a high load of discomfort and social vulnerability as they were structured mostly on the basis of only physical safety criteria; the loss of some daily services, such as newspapers or mail service, which delivery was interrupted.

Given the fragility of which the elderly are carriers and their frequent dependence on other people, in most cases they have not been provided with an alternative or a possibility to choose for their best. Of course, what has been done is in response to a desire for protection, but it is not entirely certain that the response carried out both in emergency and in the post-emergency corresponds to the offer all the supports that were actually needed.

The comparison of the data about the use of psycho-pharmaceuticals and the numbers of deaths is quite clear to demonstrate that the safety in itself does not even ensure the physical survival. Even when the cures were immediately provided, a more global approach to care failed. Adequate care and response require to design and realize an environment with the appropriate characteristics to ensure the useful size to the quality of life to elderly people, because it is a right even for older to enjoy organized environments, ensuring them the possible autonomy and a good rate of well-being in the daily life.

The World Health Organization (1948) itself suggests that health is not merely the absence of disease or infirmity, but a state of complete physical, mental and social well-being.

## Conclusion

The lived experience must be able to serve to build guidelines of intervention and useful protocols, in similar cases, to ensure as much as possible continuity and well-being, studying the proposals in advance.

Older people shall be considered as individuals able to put in place new balances aimed at well-being, given the ability of the person to adapt throughout the life cycle. It is desirable, therefore, that multidisciplinary teams specialising in this age group design the environmental dimensions useful to ensure their growth and potential development as people, even in emergency and post-emergency situations. In fact not only medical and

engineering supports are important to ensure the survival, but also - as evidenced by scientific studies on community organizations - the psychosocial perspectives, the role of direct participation and the involvement of citizens in the design of their own future (Ticehurst, Vaughan, Lewin 1996).

Listening to needs and making the elderly to participate in decision-making processes are suggested methods for better programme design, as well as developing tools to ensure the measurability and shared evaluation of the results of the actions implemented<sup>1</sup>.

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