Research

Resilience in older adults: influence of the admission in nursing home and psychopathology

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ABSTRACT

Objective: The resilience is the ability to face and overcome the adversities of life. The first aim of the study is to explore this construct referring to ageing. The characteristics of resilience were assessed in older adults, the additional endpoint is to focus on the role of institutionalization in nursing home and on the influence of chronic psychiatric illness.

Method: 197 patients (aged 65 and over) have been enrolled in the observational cross-sectional study. The sample was composed by 91 subjects who lived at home (Community-dwelling, group I), 56 subjects who lived in a nursing home (Nursing-home, group II) and 50 subjects who lived in a nursing home, suffering from psychiatric disorders (Psychogeriatric division, group III). The resilience was evaluated through the Resilience Scale (RS) and the Connor-Davidson Resilience Scale (CD-RISC).

Results: The mean total score of RS decreased from the group I to the group III (55.4, 49.8 and 46.6, respectively). Moreover, using pairwise comparison among groups, significant differences between the group I and the group II (5.6, $p<0.0001$) and between the group I and the group III (8.8, $p<0.0001$) were found. In the CD-RISC total score, significant differences among the three groups ($p<0.0001$) were observed, with a decrease of the mean values from the group I to the group III (66.2, 62.4 and 56.4, respectively). The pairwise comparison showed significant differences between the group III and the group I ($p<0.0001$) and between the group III and the group II ($p=0.03$).

Conclusion: The first aim of the study to explore the construct of resilience in reference to ageing both as a dispositional resource and as an environment adjusted strategy of adaptation has been reached: the characteristics of resilience were assessed in older adults. Moreover, the second endpoint has been achieved too as the data showed that resilience skills of older adults are compromised both by institutionalization and by concurrent diagnosis of psychiatric disorder.

Keywords:

Resilience, Psychogeriatrics, Nursing home, Older adults, Institutionalization, Mental illness

Introduction

The term "resilience" was originally established in the fields of physics and engineering: it indicates the property of a material to adsorb sudden impacts without fracturing. The concept has been later introduced in other contexts, particularly in psychology and medicine (psychiatry, oncology, pediatrics, geriatrics etc.). In these disciplines, resilience assumes the meaning of a positive adaptation, which is

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manifested by a marked ability to face and overcome the adversities of life, bouncing back transformed or even strengthened [1].

A growing interest about the emotive answer to stressing life events dates back to the 19th century: some individuals, even if facing most pernicious conditions such as mental or physical illness, managed to react better than others thanks to unexpected resources [2].

First detailed clinical studies about this phenomenon only began in the 1970s, mainly due to the contribution of Werner and Smith. These authors, starting from the 1955 until 1993, undertook a longitudinal study at the Kauai islands on a significant number of high-risk children who came from disadvantages families and were characterized by unexpected reactive abilities [3].

Further researches focused on determining qualities owned by resilient people [4] and on their environmental and relational backgrounds [5]. This led to the development of some psychological models, aimed to describe the expressions of resilient phenomena: main models were the Richardson's [6], Kumpfer's [7] and Newman-Blackburn's [8] ones.

Nowadays the resilience is considered by several researchers both as a characteristic of personality, which depends on genetic/biological [9-12] and on personality/psychological [13] internal factors, and as a dynamic process, which emerges after a traumatizing exposure to adversities [14,15].

The analysis of resilience factors has led to the finding of characteristics that can be considered protective (female sex, emotive stability, autonomy, adaptability, cleverness, sense of humour, good behaviour, education, positive familiar background, community's values) or risky (opposite personality characteristics, illnesses, socioeconomic disadvantages, traumas, isolation) for the processes of adaptation [5,7,16-18]. In general, these characteristics can be distinguished in personality internal factors and environmental ones. Different subjects can perceive life events differently and the same individual can even face similar situations using different patterns. This variability of reactions depends on actual circumstances and general conditions. When the perception of an event leads to a negative interpretation, the situation is felt by the subject as abnormal and hardly bearable, thus it assumes the role of trauma [4,5,19].

Ageing can potentially destabilize the resilience of every individual. The progress of age as itself is an important factor of vulnerability and this is due to transformations experienced by the organism in this process [9,12,20]. These changes do not only concern physical conditions (such as age-related general illnesses), but they also involve subject's environment since aged people require greater cares [21-23]. According to this point of view, institutionalization can be considered as the most significant event [24].

This measure is more frequent among "frail" old population with physical, psychic and social issues (environmental and relational changes, losses of loved ones, drops in economic independence and self- efficacy) [25]. Moreover, these problems tend to increase during the years, particularly in the last decades of life [27,28].

All these factors severely affect positive adaptation abilities and, when caregivers have to appeal to the continuative support of a nursing home [28], the older adult is exposed to huge difficulties because he/she isn't able to make use of already compromised resilient skills [7,24,29,30].

In the last decades, lots of researches have explored the mutual relationship between resilience and mental illnesses, either if the latter was already present in anamnesis or it was the result of the exposure to events with a strong emotive impact [16,31]. In the first situation subjects are more vulnerable to stressors, so they belong to a high-risk population group [18,32,33].

Mental illness represents a relevant trauma to psychiatric patients and it modifies behavioral patterns and psychological reactions to adversities: this aspect causes an important decrement in resilience [10].

The first aim of the study is to explore the construct of resilience in reference to ageing, both as a dispositional resource and as an environment adjusted strategy of adaptation: the characteristics of resilience were assessed in older adults. The second endpoint is to focus on the role of institutionalization in nursing home and on the influence of chronic psychiatric illness upon individual resilience.

Methods

■ Setting

Different type of health care has been taking into consideration:

1)   Home care service:

-      Multidisciplinary day care

-      Municipal day care

2)   Semiresidential or residential setting:

-      Day center

-      House hotel care

-      Nursing home care.

■ Sample

197 subjects enrolled have been evaluated within three months (January-March 2014). Patients had to fulfill the following inclusion criteria: be aged 65 and over; fully understand the items of the questionnaires; sign an informed consent for the participation.

The sample was composed by:

1. Group I: 91 subjects who lived at home (Community-dwelling);

2. Group II: 56 subjects who lived in a nursing home without psychiatric diagnosis (Nursing-home);

3. Group III: 50 subjects who lived in a nursing home with psychiatric diagnosis (Psychogeriatric division).

The design of the study was approved by the Research Ethics Board of the nursing home (project number: 20254). The research was carried out in compliance with the Helsinki Declaration.

■ Variables and instruments

Socio-demographic data (age, sex, education and marital status) and possible psychiatric diagnosis according to the International Classification of Diseases (ICD-10) for every subject were collected [34].

Psychiatric diagnosis was gathered into:

1) Mood [affective] disorders

2) Psychotic disorders (Schizophrenia, Schizoaffective Disorder, and Delusional Disorder)

3) Disorders of adult personality and behavior

4) Intellectual disability (Mental Retardation)

5) Dementia

The resilience was assessed through the *Resilience Scale* (RS) and the *Connor-Davidson Resilience Scale (*CD-RISC). The *Resilience Scale* owns

a bifactorial structure: personal competence (17 items) and self-acceptance (8 items) [35]. According to the aim of this study, the 10-items version of the scale was chosen [36]. The scale is not substantially different from the original 25-items version. The RS rates on a 1 ("strongly disagree") to 7 ("strongly agree") Likert Scale; a higher score concurs with a greater resilience. In several studies this scale has shown an excellent internal consistency and high Cronbach's Alpha values [37,38].

The 25-items *Connor-Davidson Resilience Scale* (CD-RISC) presents a five-factors structure: personal competence and tenacity (8 items), self-confidence and tolerance of negative affect (7 items), positive acceptance of change and secure relationship (5 items), control (3 items) and spiritual influences (2 items). The CD-RISC rates on a 0 ("not true at all") to 4 ("true nearly all of the time") Likert Scale; the total score ranges from 0-100, with higher scores reflecting greater resilience. An excellent internal consistency was showed too, as well as a good time stability, measured by 24 weeks test- retest reliability [33,37,38].

These rating scales have been employed thanks to their different psychometric capabilities: the RS is one of the most used rating scales to measure dispositional resilience in adults, particularly in the older ones [21,35,38]. The CD-RISC has been employed to assess dynamic resilient processes and abilities to cope with stress and adversities [33].

■ Statistical analysis

Demographic and clinical characteristics were summarized using mean and standard deviation for continuous variables and proportion for qualitative ones. Differences among groups were tested via F-test and Chi-Square test for quantitative and qualitative features, respectively. To assess the potential confounding role of age (in three classes: <70, 71-79 and 80+ y.o.), sex, education and marital status, the mean values and the standard deviations for the RS and for the CD-RISC across covariates levels were reported. The association with a F-test was tested. N=26 (13%) and n=21 (11%) subjects had missing information on level of education and marital status, respectively. Since that mean values and internal consistency of data collection for the two resilience scales were comparable to the remaining subjects, those were not excluded from the analyses to maximize the available

sample size (Cronbach'alpha, Cronbach LJ, 1951). An ANOVA model (Model 1) and an ANCOVA model controlled for age, sex, marital status and education (Model 2) were used to assess the difference among the three groups with respect to the two resilience scores. The mean differences (95% confidence intervals) among groups and the p-values for pairwise comparisons adjusted for multiplicity according to the Tukey's method (Tukey JW, 1991) were estimated to control the overall significance level at α = 0.05. All analyses were performed with SAS Version. 9.2 (SAS Institute, Inc., Cary, NC).

Results and discussion

Socio-demographic and clinical characteristics in the three groups previously described are summarized in **(Table 1)**. A significant difference among the groups for age and marital status (p<0.0001) was observed. In particular, in the "Nursing home" group the highest mean age (84.7 vs. 74.1 in the "Community-dwelling" and 77.2 in the "Psychogeriatric division", respectively) was observed. A higher prevalence of married subjects was found in the "Community-dwelling" group (51.6%) while in the other two groups widowed ("Nursing home" 41.1%) and single/divorced subjects ("Psychogeriatric division" 48.0%) are more prevalent.

Women are more represented in all groups, particularly among nursing home subjects (73,2% females vs 26,8% males); the level of education is rather low for the majority of subjects (primary school: 72,2%, 67,9% and 56%, respectively), while percentage of high school (6%) and university graduation (20%) is higher in psychiatric patients. However no significant difference in sex and education was detected.

The most common psychiatric diagnosis is Depressive Disorder (40%), Psychotic Disorder (28%), Personality Disorder (14%), Dementia (12%) and Mental Retardation (6%) (Group III).

As regard as the relation among RS/CD-RISC and socio- demographic variables **(Table 2)**, the RS is influenced by age and sex while no differences regarding marital status and education were observed. Scores usually decreases with the increase of age (52.6, 52.9, 49.8 con p= 0.05) and in female sex (50.3 vs 53.8, p= 0.006). No significant differences were showed for education and marital status, this is also due to the lack of data in these parameters (p= 0.17 and p=0.06, respectively).

CD-RISC scores seem not influenced by socio-demographic parameters. The validity of the two scales was tested by internal consistency analysis. Cronbach's alpha of total sample is 0.82 in RS and 0.90 in CD-RISC, 0.77 and 0.89 in group I, 0.84 and 0.87 in group II, 0.73 and 0.90 in group III. Internal consistency was high-leveled in all groups and this allowed us not to exclude patients who presented some missing data in education and marital status.

A significant difference among the three groups compared to the Resilience Scale was observed **(Table 3)**. The mean total score of RS decreased from the group I to the group III (55.4, 49.8 and 46.6, respectively). Significant differences between the group I and the group II (5.6, p<0.0001) and between the group I and the group III in RS (8.8, p<0.0001) were found in the pairwise comparison among groups. No significant differences between the group II and the group III were observed. These results were confirmed by adjustment for socio- demographic parameters (Model 2).

In the CD-RISC total score significant differences among the three group (p<0.0001) were observed, with a decrease in the mean values from the group I to the group III (66.2, 62.4 and 56.4, respectively) **(Table 4)**. The pairwise comparison showed significant difference between the group III and the group I (p<0.0001) and between the group III and the group II (p=0.03). These results were confirmed in the adjusted model. No difference was observed between the group I and the group II. The results were confirmed also in the model adjusted for socio-demographic covariates.

These results showed that resilience skills and mental individual resources to face life's adversities are compromised both by institutionalization and by the concurrent diagnosis of psychiatric disease. Older adults experience a season of life in which personal resources are physiologically reduced; additional aggravations consist in a relevant modification of life habits, different interpersonal and supportive relationships and incoming physical/mental complications.

In this study RS and CD-RISC are used to explore all aspects of resilience. RS distinguished a bigger number of socio-demographic categories and it is more sensitive both to residential and psychopathological aspects. This result is in line with the literature, since RS has been employed in older adults samples too, while CD-RISC mainly in a younger population. Therefore, RS would be recommended in elderly.

Table 1: Demographic and clinical characteristics.

		Group I (N=91)	Group II (N=56)	Group III (N=50)	p_value*
Age (Years)	Mean (SD)	74.1 (6.4)	84.7 (7.7)	77.2 (9.0)	<0.0001
Sex	Male (%)	41 (45.1%)	15 (26.8%)	16 (32.0%)	0.06
	Female (%)	50 (54.9%)	41 (73.2%)	34 (68.0%)	
Education	Illiterate/Primary school (%)	66 (72.5%)	38 (67.9%)	28 (56.0%)	0.06
	Junior high school (%)	11 (12.1%)	6 (10.7%)	3 (6.0%)	
	High school/Graduate (%)	4 (4.4%)	5 (8.9%)	10 (20.0%)	
	Unknown (%)	10 (11.0%)	7 (12.5%)	9 (18.0%)	
Marital status	Widowed (%)	23 (25.3%)	23 (41.1%)	17 (34.0%)	<0.0001
	Single/Divorced (%)	11 (12.1%)	16 (28.6%)	24 (48.0%)	
	Married (%)	47 (51.6%)	7 (12.5%)	8 (16.0%)	
	Unknown (%)	10 (11.0%)	10 (17.9%)	1 (2.0%)	

*F-test for quantitative and Chi-Square test for qualitative features; NA = not applicable

Table 2: Mean Score and Standardized Cronbach's alpha in RS and CD-RISC among covariates.

			Resilience scale		Connor-Davidson scale	
		N	Mean (SD)	Cronbach alpha	Mean (SD)	Cronbach alpha
Age (Years)	<70 years	36	52.6 (10.5)	0.88	63.5 (11.8)	0.87
	70-79 years	83	52.9 (8.2)	0.82	64.1 (13.6)	0.91
	80 years and over	78	49.8 (7.4)	0.75	60.7 (12.3)	0.88
	p-value*		0.05		0.21	
Sex	Male	72	53.8 (8.6)	0.82	64.8 (14.6)	0.92
	Female	125	50.3 (8.1)	0.80	61.4 (11.5)	0.87
	p-value*		0.006		0.08	
Education	Illiterate/Primary school	132	51.7 (8.3)	0.79	62.7 (12.7)	0.88
	Junior high school	20	54.1 (7.1)	0.81	66.2 (11.0)	0.89
	High school/Graduate	19	48.1 (11.0)	0.87	59.1 (16.4)	0.92
	Unknown	26	51.6 (7.8)	0.86	61.9 (11.6)	0.91
	p-value*		0.17		0.37	
Marital status	Widowed	63	51.0 (8.0)	0.79	62.1 (12.5)	0.90
	Single /Divorced	51	49.7 (9.9)	0.87	61.1 (15.1)	0.92
	Married	62	53.9 (7.4)	0.73	64.9 (11.5)	0.85
	Unknown	21	51.2 (7.9)	0.90	61.2 (10.8)	0.93
	p-value*		0.06		0.40	

*F-test from one-way ANOVA model.

The differences in socio-demographic characteristics in the three group are due to the typology of sampling and to the different intrinsic composition of community-dwelling population and the nursing home one. For example, mean age is higher in institutionalized/not psychiatric subjects and this fact is linked to the concurrent increase of need of care during aging.

The mean age of institutionalized subjects suffering from mental disorder and the one of the group I was similar. The mean age of the group III is lower than the one of the group II, this is caused by an earlier need of support in psychiatric patients. The marital status distribution appears different in the groups too: nursing home patients are mostly lacking of a partner support, because they never got married or the partner has died. This condition is a supporting factor to institutionalization because of the greater need of assistance in subjects who cannot benefit from a caregiving partner. Furthermore, in the sample there is a female prevalence and this is evident for all groups, particularly in nursing home patients. Women notoriously live longer and they are the most represented population in nursing home; on the other hand men can have more possibilities to receive care at home thanks to the presence of an often longer-living partner.

Subjects suffering from psychiatric disorders obtained the lowest score in both scales, even though the presence of a greater number of graduated people (junior high school and university). A high education has been described as a protective factor in studies regarding resilience supporting elements. Therefore, it is evident how

Table 3: Differences in RS total score between groups.

	MODEL 1				MODEL 2			
	Group I (n=91)	Group II (n=56)	Group III (n=50)	p-value	Group I (n=91)	Group II (n=56)	Group III (n=50)	p-value
Total score								
Mean (SE)	55.4 (7.0)	49.8 (7.8)	46.6 (8.3)	<0.0001	55.3 (1.1)	50.5 (1.2)	46.6 (1.3)	<0.0001
Difference between means (CI 95%)								
Group I vs Group II		5.6 (2.6;8.7)		<0.0001		4.7 (0.98;8.5)		0.01
Group I vs Group III		8.8 (5.7;12.0)		<0.0001		8.7 (5.1;12.2)		<0.0001
Group II vs Group III		3.2 (-0.3;6.7)		0.08		3.9 (-0.01;7.9)		0.05

MODEL 1: unadjusted ANOVA

MODEL 2: ANOVA model adjusted for age, sex, marital status and education

Table 4: Differences in CD-RISC total score between groups.

	MODEL				MODEL 2			
	Group I (n=91)	Group II (n=56)	Group III (n=50)	p-value	Group I (n=91)	Group II (n=56)	Group III (n=50)	p-value
Total score								
Mean (SE)	66.2 (1.3)	62.4 (1.6)	56.4 (1.7)	<0.0001	65.7 (1.8)	63.5 (2.0)	55.9 (2.0)	0.0003
Difference between means (CI 95%)								
Group I vs Group II		3.8 (-1.1;8.7)		0.16		2.3 (-3.8;8.3)		0.66
Group I vs Group III		9.8 (4.8;14.9)		<0.0001		9.9 (4.1;15.6)		0.0002
Group II vs Group III		6.1 (0.4;11.7)		0.03		7.6 (1.2;14.0)		0.01

MODEL 1: unadjusted ANOVA

MODEL 2: ANOVA model adjusted for age, sex, marital status and education

the role of education as a protector factor was contrasted by the psychiatric diagnosis.

The main limit of the study is the low size of the sample; further experimental confirmation would be desirable. It would be also interesting for future researches to deepen the possible influence of specific therapies to maintain or recover resilience skills in older adults.

Conclusions

The first aim of the study has been achieved as the characteristics of resilience in older adults have been highlighted. Moreover, the second endpoint has been achieved too: the data showed that resilience skills of older adults are compromised both by institutionalization and by concurrent diagnosis of psychiatric disorder. The study shows how resilience is negatively influenced by institutionalization in older adults. According to our knowledge, this relationship had been only hypothesized in scientific literature before. A decrease of resilience in nursing home psychiatric patients was also found, especially in psychotics and mentally retarded patients.

Therefore, an evaluation of individual resilience in institutionalized subjects would be useful both at the admission and in the follow up. This evaluation would allow the staff to measure the personal level of reactivity with the aim to screen high-risk patients and to promote adjustment skills and positive effects on general wealth conditions and quality of life.

Support of resilience in senile age mainly consists in an adequate social support in order to avoid institutionalization, when it is possible. However, less resilient subjects are also those who are frailer and in needing of a continuous assistance in nursing home.

Therefore, it is desirable that in nursing home organization the staffs promote: support, social, gratifying activities, and, if suitable, religious or spiritual involvement.

It would be possible to supply specific treatments in particularly high-risk situations thanks to an evaluation of resilient skills. Cognitive support, practical activities training, supportive groups, behaviour or cognitive-behavioural therapy, cognitive bibliotherapy, problem solving therapy, short psychodynamic therapy and memory/reminiscence therapy are proposed in literature [39]. Purposes are directed to increase flexible answers and to fight stereotypes about ageing and institutionalization.

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