



# Reliability and validity of the novel Italian version of the 14-item Resilience Scale (RS-14) in adults

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## Abstract

**Background** The aims of this explore the psychometric properties of the novel Italian version of the 14-item Resilience Scale (RS-14) and to assess the relationship between RS-14, mood and quality of life.

**Method** The original English version of the RS-14 was translated into Italian, and the Italian version was confirmed with back-translation. Three-hundred healthy volunteers ( $M = 122$ ) aged > 18 years, completed the RS-14 as well as different scales to measure depression, anxiety and quality of life. Statistical analyses were used to measure the reliability, validity and key factors of RS-14. We measured the differences in socio-demographic subgroups, the relationship between mood and RS-14 score and the impact of RS-14 on mental health.

**Results** The RS-14 showed good acceptability, reliability and validity. Factor analysis indicated a two-factor structure: ‘Self-confidence’ and ‘Self-control’, with the former having a more significant impact on mental health. The RS-14 score was not significantly different for sex, age and education, but there was significant difference for marital status. Lower resilience correlated with higher levels of anxiety and depression and with lower quality of life.

**Conclusion** We propose the novel Italian version of the RS-14 which has good reliability and validity. Our results stress the influence of resilience on mental health.

**Keywords** Aging · Depression · Mental health · Psychometric properties · Quality of life · Resilience scale

## Abbreviations

BP	Bodily pain
COVID	COroNaVIRus Disease 19
EEG	Electroencephalography
EQ-VAS	Visual analogue scale
EQ-5D	EuroQoL 5-dimensions
F	Female
GH	General health
HADS	Hospital Depression Anxiety Rating Scale
ICC	Intraclass correlation coefficient
IQR	Interquartile range
M	Males
MH	Mental health
MMSE	Mimi Mental State Examination
$p$	$p$ Value
PD	Parkinson disease
PF	Physical functioning
RE	Role emotional
RP	Role physical
RS	Resilience Scale
SD	Standard deviation

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SF	Social functioning
SF-36	Short Form Health Survey 36 item
SPSS	Statistical Package for Social Science
VT	Vitality

## Introduction

Resilience is the human ability to cope with difficult, stressful and traumatic situations while maintaining or restoring normal functioning [1]. Resilience is not an innate capacity [1], but it is a dynamic and modifiable process, gradually developed through life by facing and overcoming adverse events [2]. It has been construed to be composed of seven factors: optimism, acceptance, focus on problem solving, defense mechanisms, forgiveness, responsibility, acquaintance and planning for the future. Resilient subjects are characterized by optimistic view, constructive criticism, good relationships with others, social skills and emotional awareness [1, 3]. Resilience represents a complex set of protective and salutogenic factors, and it can be used to better understand health and illness, treatment and healing processes, including co- and multi-morbidities [2]. In fact, it is linked with mental health, well-being and quality of life (QoL), and its factors modulate the relationship between stress, trauma and/or illness and positive outcomes [2, 4, 5]. Higher resilience is associated to lower vulnerability, risk of diseases and multimorbid conditions and predicts positive adaptation to chronic conditions [1, 6–8].

Among chronic conditions, neurological disorders are emergingly raising as prevalent conditions with scarce therapeutic options in most cases. In 2010, neurological disorders accounted for 3% of all global disease-related disability-adjusted life years (DALYs), a 17% increase since 1990, much of which is attributed to the overall aging of the global population [9, 10]. In 2015, stroke and Alzheimer's and other types of dementia were the second and third leading causes of DALYs, respectively, in the population aged > 80 years [10]. In this context, it seems advisable to adopt alternative approaches to help patients and their caregivers adapting to live with chronic conditions. In the last years, resilience has been in fact increasingly studied in several neurologic conditions. Robottom et al. [11] found that in Parkinson disease (PD), resilience correlated with lower motor and non-motor disability and better quality of life. Furthermore, we recently demonstrated that lower resilience levels predicted higher traumatic consequences and poorer health-related QoL (HR-QoL) in PD patients following the COVID-19 pandemic [8]. In a sample of subjects with epilepsy, greater resilience was associated with better seizure control, normal EEG background activity and antiepileptic drug monotherapy. Moreover, higher resilience correlated with lower

depressive episodes and better performance in the Mini-Mental State Examination (MMSE), resulting in higher QoL [12]. Finally, resilience has been suggested to reduce caregiver burden in both dementia [13] and PD [7]. In fact, it would allow caregivers to manage and respond positively to the highly stressful demands of care [14].

Mirroring the significant increase in resilience research [15], a variety of tools have been developed for its measurement. However, some of these instruments lack evidence of appropriateness for administration to the general population [16]. One of the best scales to measure resilience is the Resilience Scale (RS) [17], which assesses five core dimensions of resilience: purpose, perseverance, self-confidence, equanimity and existential solitude (authenticity) [4, 18, 19]. The RS has been subsequently revised by one of the original authors in 2009 [20] in a novel shorter version, consisting of 14 items (RS-14), which has been shown to be as accurate as the original version to measure resilience levels. The RS-14 has been therefore widely used [16, 18, 21] because of a number of advantages with respect to other resilience scales, including ease of use, applicability in different age groups ranging from adolescent to elderly, basic constructs focused on positive psychological qualities rather than deficits and good psychometric properties [22]. The RS-14 is constituted by 14 items and for each subject is requested to declare the agreement on a 7-point Likert-type scale. With its maximum being 98, a score < 56 indicates a very low level of resilience [20]. The RS-14 has been subsequently translated and validated in several languages, including Italian [23]. Although the Italian version of RS-14 showed overall good validity and reliability, it was also shown that the item 12 ('In an emergency, I am someone people can generally rely on') could not be grouped with any other items in a factor analysis. In fact, Mirošević et al. [24] found that, differently from all other versions, it was the only study identifying in the factor analysis three factors of the RS-14. Having used the Italian version of the RS-14 in our own research, we come across a mistake in the translation of the RS-14 by Callegari et al. [23] related indeed to item 12, which could be likely explaining the findings detailed above. Moreover, the study by Callegari et al. [23] also has some limitations regarding the characteristics of the recruited sample: in fact, 75% of the sample was composed of young adults below the age of 24 years, and it was unbalanced in terms of sex distribution with almost 90% of the sample being females. A more evenly distributed sample could help clarify the debate on the relationship between resilience and sex [17, 25–28].

For these reasons, we aimed: (1) to explore the psychometric properties of novel translation of the RS-14 in adult Italian sample, homogeneously distributed for the variable sex and with a better representation of middle-aged and older adults; and (2) to assess the relationship among RS-14, mood and quality of life.

## Methods

### Participants and assessments

Healthy volunteers aged > 18 years, with no history of any neurological or psychiatric conditions and not taking any drugs acting on the nervous system, were invited to participate to this study, after providing their written informed consent. The project was performed in accordance with the ethical standards laid down in the 1964 Declaration of Helsinki and was approved by the local Ethics Committee.

Data were collected on an encrypted online platform. Students of the medical school of the University of Salerno were invited to involve their parents/family members to participate in the study. They were provided with a link to get access to the online questionnaires and scales. The first page contained information about the aims of the study, a consent form, as well as information about personal data handling (anonymity) and the time needed to complete the questionnaires of about 20 min. Respondents had to give their informed consent before they could start completing the questionnaires.

The following data were gathered: age, sex, years of education (junior high school/senior high school/university degree or higher), marital status (single/non-single), presence of any medical conditions, current pharmacological treatments. Moreover, subjects were requested to complete the RS-14, the Hospital Depression Anxiety Rating Scale (HADS) to assess depression and anxiety, the EuroQol 5D (EQ-5D) and the EQ-VAS to investigate HR-QoL and the Short Form Health Survey 36 item (SF-36) to assess QoL.

The original English version of the RS-14 was translated into Italian by one of the authors who is fluent in English (RE) and subsequently back-translated by a native English speaker (SA) who is fluent in Italian. There were no significant differences between the two English versions (original and back-translated). The novel Italian translation of the RS-14 is displayed in [Appendix](#).

### Statistical analysis

All analyses were performed by SPSS for Windows, version 23.0. All statistical tests were two-tailed, with alpha set at 0.05. A descriptive analysis was used to study the frequency distribution of all variables of interest, and the Mann–Whitney test was used to analyze the differences between males and females in terms of age and education.

The following psychometric properties were explored for the RS-14 total score: acceptability, internal consistency and construct validity. Acceptability was considered

appropriate for each RS-14 item if there were  $\leq 5\%$  of missing values and for the total score if there were  $\leq 15\%$  of the lowest and highest possible scores (floor and ceiling effect). Moreover, skewness of total (limits,  $-1$  to  $+1$ ) was determined. Internal consistency was evaluated by means of Cronbach's alpha. A value  $\geq 0.70$  was considered acceptable. Scaling assumptions referring to the correct grouping of items and the appropriateness of their summed score were checked using corrected item-total correlation for RS-14 (standard,  $\geq 0.40$ ).

Construct validity was explored with Spearman's correlation between RS-14 and the other administered scales. Namely, we used the EQ-5D total score, the HADS total score and its subscores, as well as physical functioning (PF), bodily pain (BP), general health (GH), vitality (VT) and mental health (MH) scores of the SF-36. Correlations were considered strong with coefficients  $> 0.70$  and moderate with a coefficients between 0.30 and 0.70.

We also determined the reliability of the RS-14 in terms of absolute (i.e. the extent to which the scores remain the same across time or situations) and relative stability (i.e. the degree to which the relative differences in scores among individuals remain the same over time). In order to assess absolute stability, the paired Wilcoxon test was used to compare the mean RS-14 score at baseline and follow-up. To determine the magnitude of these differences in addition to their statistical significance, Cohen's *d* for within-subjects comparisons with the paired Wilcoxon test was calculated correcting for dependence between means. Subsequently, in order to examine the relative stability of the RS-14 score, the intraclass correlation coefficient (ICC) between RS-14 on the first and second administration was computed.

Subsequently, we conducted a factor analysis, with Varimax rotation, to examine the factor structure of RS-14.

Where necessary, the Mann–Whitney and Kruskal–Wallis tests were used to measure the differences in RS-14 between socio-demographic subgroups. Where necessary, post hoc analyses were performed using pairwise Mann–Whitney test,  $p < 0.05$  being deemed significant.

Mann–Whitney test was used to compare patients stratified according to the median score of RS-14 for mood symptoms, as assessed by the HADS.

Finally, to explore whether RS-14 score, could affect the level of mental health, a logistic multinomial regression analysis, with bootstrap method, was performed with SF-36 MH as the dependent variable and controlling for socio-demographic variables that resulted significant in the Mann–Whitney and/or Kruskal–Wallis test analyses,  $p < 0.05$  deemed significant. Specifically, we used SF-36 MH as dichotomic variable, by grouping the scores above and below the median value. Subsequently, to explore which of the factors obtained by factor analysis impacted the most

on SF-36 MH, we conducted a linear regression with the Bootstrap method.

## Results

### Sample characteristics

Three-hundred-twelve subjects were invited to participate and completed the assessments. Of these, 12 were excluded because of the presence of a neurological or psychiatric condition. Therefore, 300 subjects (178 females, 59.3%) with a mean ( $\pm$  SD) age of  $42.41 \pm 13.11$  years and mean ( $\pm$  SD) education of  $14.86 \pm 4.27$  years were included in the analysis. Male and female subjects did not differ for age and education (age,  $U = 10,306$ ,  $p = 0.45$ ; education,  $U = 5965.5$ ,  $p = 0.52$ ) (see Table 1 for the socio-demographic data of the entire sample).

Fifty subjects (26F, 52%) were asked to completed the RS-14 for a second time after about 4 weeks: they did not significantly differ on any socio-demographic variables nor in terms of resilience and quality of life from the 250 participants who completed the RS-14 only at baseline (data not shown, for all  $p > 0.05$ ).

### Acceptability

The mean ( $\pm$  SD) RS-14 total score was  $82.34 \pm 10.70$ . One-hundred percent of data were totally computable,

and there were no missing values. In the entire sample, neither the ceiling nor the floor effects were observed for the RS-14 total score (lowest possible score = 35, 0.3%; highest possible score = 98, 3.3%). The skewness of RS-14 was within the standard limits (RS-14 total score =  $-1.02$ ).

### Reliability

Cronbach's alpha was 0.897, and, thus, it was considered acceptable for internal consistency. No item improved Cronbach's alpha if removed. Item RS-14 correlation was  $\geq 0.45$  for all questions (Table 2).

### Convergent and divergent construct validity

As for the RS-14, the Spearman's correlation showed no relation with education ( $\rho = -0.05$ ,  $p = 0.47$ ) and a low correlation with age ( $\rho = 0.18$ ,  $p = 0.001$ ). A moderate correlation emerged with SF-36 MH, HADS-D, SF-36 VT, HADS-Total score, SF-36 RE, SF-36 SF, HADS-A, EQ-VAS, EQ-5D. A low correlation emerged with SF-36 GH, SF-36 RP, SF-36 BP and SF-36 PF (Table 3).

### Absolute and relative stability

Regarding absolute stability of RS-14, the Wilcoxon test showed no significant difference between the RS-14 score at baseline compared with follow-up ( $z = -1.79$ ,  $p = 0.09$ ). The ICC between scores on the first and second administration was 0.93 (0.86–0.96, confidence interval for 95%;  $p < 0.001$ ). The Cohen's  $d$  for within-subjects was 0.17 ( $p < 0.001$ ). At follow-up, the 76% of 50 subjects differed only  $\pm 5$  points by baseline RS-14 score.

### Factor analysis

All 14 questionnaires were deemed appropriate for factor analysis, since the Kaiser–Meyer–Olkin (KMO) measure was 0.91. In addition, Bartlett's test was 1704.09 ( $p < 0.001$ ), indicating that the data satisfied the conditions for factor analysis. The factor analysis disclosed two factors with eigen values greater than 1.0, and the visual inspection of the screen plots confirmed the presence of two factors, of which the first loads items 11, 10, 13, 4, 14, 12 and the second items 5, 3, 6, 7, 1, 8, 9, 2 (Table 2). All 14 items showed factor loadings greater than 0.45 and less than  $-0.45$ . Factor loadings for Factor 1 were between 0.50 and 0.80. Factor loadings for Factor 2 were between 0.49 and 0.73. The total variance explained by the extracted factors was 50.67%. The variance explained by Factor 1 was 26.23% and by Factor 2 was 24.44%. The items loading on Factor 1 relate to trust and confidence in life, and so this factor was named

**Table 1** Participants' characteristics

	<i>N</i> (%)	RS-14 total score median (IQR)
Sex		
Male	122 (40.7)	87 (14)
Female	178 (59.3)	83 (13)
Age		
< 30	65 (21.6)	81 (15)
31–40	85 (28.4)	85 (14)
41–50	69 (23)	86 (14)
51–60	46 (15.4)	83 (15)
> 60	35 (11.6)	86 (17)
Marital status		
Single	144 (48)	81 (14)
Non- single	156 (52)	86 (12)
Education		
Junior high school	38 (12.6)	83 (15)
Senior high school	109 (36.4)	86 (14)
University degree or higher	153 (51)	84 (14)

Abbreviations: *IQR* interquartile range, *N*, number, *RS-14* the 14-item Resilience Scale

**Table 2** Spearman’s correlation analysis between the total score of the RS-14 and each item (left) and results obtained by factor analysis (right)

	Correlations between the total score of the RS-14 and each item	Factor 1: Self-confidence	Factor 2: Self-control
1. I usually manage one way or another	.54*		.561
2. I feel proud that I have accomplished things in life	.68*		.490
3. I usually take things in stride	.67*		.660
4. I am friends with myself	.72*	.703	
5. I feel that I can handle many things at a time	.61*		.726
6. I am determined	.68*		.653
7. I can get through difficult times because I have experienced difficulty before	.59*		.582
8. I have self-discipline	.65*		.539
9. I keep interested in things	.63*		.512
10. I can usually find something to laugh about	.59*	.782	
11. My belief in myself gets me through hard times	.79*	.802	
12. In an emergency, I am someone people can generally rely on	.46*	.497	
13. My life has meaning	.66*	.724	
14. When I am in a difficult situation, I can usually find my way out of it	.65*	.527	

Abbreviations: *RS-14* the 14-item Resilience Scale

\**p* < .001

**Table 3** Convergent validity of the RS-14

RS-14	Rho	<i>p</i>
SF-36 MH (mental health)	.58	< .001
HADS-Depression	-.51	< .001
SF-36 VT (vitality)	.49	< .001
HADS-Total score	-.48	< .001
SF-36 RE (role emotional)	.37	< .001
SF-36 SF (social functioning)	.36	< .001
HADS-Anxiety	-.36	< .001
EQ-VAS	.33	< .001
EQ5D-Total score	-.32	< .001
SF-36 GH (general health)	.27	< .001
SF-36 RP (role physical)	.25	< .001
SF-36 BP (bodily pain)	.21	< .001
SF-36 PF (physical functioning)	.13	< .001

Statistically significant results are indicated in bold. Abbreviations: *BP* bodily pain, *EQ-VAS* visual analogue scale, *EQ-5D* EuroQoL 5-dimensions, *GH* general health, *HADS* Hospital Depression Anxiety Rating Scale, *MH* mental health, *p* *p* value, *PF* physical functioning, *RE* role emotional, *RP* role physical, *RS* Resilience Scale, *SF* social functioning, *SF-36* Short Form Health Survey 36 item, *VT* vitality

**Self-confidence.** The items loading on Factor 2 relate to self-control and the ability to manage independently. This factor was therefore named *Self-control*. The correlation between the two factors was rho = 0.05 (*p* = 0.45). Cronbach’s alpha

of Factor 1 was 0.837 and of Factor 2 was 0.825, being therefore acceptable for internal consistency.

**Distribution of RS-14 on socio-demographic subgroups**

The Mann–Whitney and Kruskal–Wallis tests showed that the RS-14 score was not significantly different for sex, age and education (*p* > 0.05). There was a significant difference for marital status (81 (14) vs 86 (12), single vs non-single, respectively; *U* = 8683, *p* = 0.001)) (see Table 1 for median (IQR) of RS-14 according to socio-demographic variables).

**Resilience, mood and quality of life**

The Mann–Whitney test analysis showed that subjects with lower resilience (RS-14 score ≤ median of 84) had higher mood symptoms assessed by HADS than subjects with higher resilience (HADS-Total score: 14 (8) vs 9 (6), *U* = 6151, *p* < 0.001; HADS-D: 6.5 (5) vs 3 (3.5), *U* = 5780, *p* < 0.001; HADS-A: 7(5) vs 6 (3), *U* = 7563.5, *p* < 0.001).

Finally, to explore whether RS-14 score, adjusted for marital status, could predict the level of mental health, a logistic multinomial regression analysis was performed, *p* < 0.001 deemed significant. The RS-14, used as a dichotomous variable, i.e. by grouping the lower and higher scores to the median value (*B* = 1.96, Exp (*B*) = 7.09, *p* = 0.001), but not marital status, used as covariate (*B* = 0.20, Exp (*B*) = 1.22,

$p=0.46$ ), significantly affected the mental health, explaining about 25% of the variance ( $R^2=0.25$ ).

To explore the specific role of RS-14 factors on mental health, a linear regression analysis was performed,  $p<0.001$  deemed significant and  $F$ -value equal to 82.48. The Factor 1 ( $B=9.64$ ,  $\text{Exp}(B)=0.53$ ,  $p=0.001$ ) and the Factor 2 ( $B=5.19$ ,  $\text{Exp}(B)=0.28$ ,  $p=0.001$ ) significantly affected the mental health and together explain about 35% of the variance ( $R^2=0.35$ ).

## Discussion

We here provided the novel Italian version of the RS-14, demonstrating that it has good psychometric properties comparable to the original version. As reported in some international studies about RS-14 [29–31] but in opposition to others [19, 32, 33], we found two factors that we named *Self-confidence* and *Self-control*, as in a previous study [29]. As mentioned above, Callegari et al. [23] found a three-factor solution, with the validity of the construct being unacceptable, which they attributed to the homogeneity of the sample that mostly included young, single, female students. However, we hypothesize that the wrong translation of one the RS-14 items may have affected this result. On the other hand, the differences in factor structure found across studies may reflect cultural differences in the understanding of the resilience concept. In our study, the total variance of our study was satisfactory, and the inter-factor correlation was less than 0.50; therefore, factors can be considered independent from each other.

The scale as a whole showed high acceptability since data were computable for the entire sample. The acceptability of the RS-14 is also supported by the absence of both ceiling and floor effects. The internal consistency of the RS-14 has been shown high and acceptable ( $\alpha=0.897$ ). The RS-14 total score had moderate correlation with all items. As for convergent and divergent construct validity, we found unnoticeable associations of the RS-14 with demographics, education and age. Such low correlations can be indicative of a satisfactory divergent validity and suggests that the scale is suitable for Italian people of any age and education. The low correlation between RS-14 and physical functioning bodily pain and general health confirms the limited relevance of resilience in these constructs, which are more physical and less mental. On the other hand, the adequate construct validity of the RS-14 is supported by a moderate correlation with health status, depression, anxiety, vitality and mental health. These findings support the hypothesis that mood and mental health are more related to resilience than other features such as age, education, physical and general health [1, 3]. The temporal and absolute stabilities of RS-14 scores were also found to be good. The ICC in our study was high

(0.929), which could be explained by the large sample size representative of different age groups. In fact, it seems that the novel Italian translation of the RS-14 has good reliability in adults. It should be noted, however, that the age group above 60 years was not largely represented (about 12% of the entire sample). Although we did not find any age effect on resilience levels, which is in line with the original study by Wagnild and Young [17], a further validation of the Italian RS-14 might be required in the elderly considering the potential effect of age on resilience that has been suggested by some authors [25, 28, 34, 35].

Similarly, we did not find any differences between male and females in line with previous evidence [17, 28]. However, other studies found that males show greater resilience than females [25–27]. It should be noticed, however, that most of these studies recruited a sample which was very unbalanced in terms of sex distribution, and this might have affected the results.

We did not find a significant relationship between education and resilience; these data are in line with the evidence that schooling is not considered to modulate resilience [1, 3] and would rather support the relationship between emotional intelligence and resilience [36]. However, there are heterogeneous findings about the interaction between education and resilience [17, 26, 35, 37]. Although we acknowledge that subjects with low education were slightly under-represented in our study, we also note that the comparison between subjects with senior high school level and with University degree or higher was not significant and that there was no correlation between resilience levels and years of schooling, which support the consistency of our findings. Nonetheless, other studies with higher percentages of subjects with low education may be useful to definitively clarify this aspect.

In our sample, singles had lower resilience than non-singles, which is in line with research demonstrating that social support increases resilience and maintains well-being [38]. Finally, we showed that subjects with lower resilience had higher depression and anxiety symptoms in line with previous evidence demonstrating that mood dysfunction is negatively associated with trait resilience [21, 35, 39]. Moreover, we found that resilience predicted mental health. Although both factors found in the factorial analysis significantly influenced mental health, *Self-confidence* was more heavily strictly related to mental health than *Self-control*. In accordance with the cascade model, certain resilience factors can contribute to the development of others. Therefore, it is conceivable that the *Self-confidence* factor contributes to the *Self-control* factor. Furthermore, the *Self-confidence* factor is more associated with primary resilience which is related to maintaining equilibrium and health, and preventing stress. While the *Self-control* factor is associated with secondary resilience, linked to processes and behaviors

aimed at reducing stress and restoring health and psycho-physical equilibrium [1].

Therefore, we support a preventive work that may increase the capacity of the subjects to have a Self-confidence attitude about their skills and abilities, accept themselves, know their strengths and weakness well and have a positive view of yourself, setting realistic expectations and goals, communicating assertively and handling criticism.

In summary, we here provided a novel Italian translation of the RS-14 that can be used in both future research and clinical settings.

### Appendix: La Scala della Resilienza a 14 item (RS-14)

Per favore legga le seguenti affermazioni. Per ciascuna indichi il suo grado di accordo, cercando il numero sulla scala da 1 a 7, dove 1 indica che per quell'affermazione lei è fortemente in disaccordo e 7 indica che è fortemente d'accordo.

	Fortemente in disaccordo							Fortemente in accordo						
1. Di solito riesco a cavarmela in un modo o nell'altro	1	2	3	4	5	6	7	1	2	3	4	5	6	7
2. Mi sento orgoglioso/a per le cose che ho realizzato nella mia vita	1	2	3	4	5	6	7	1	2	3	4	5	6	7
3. Solitamente affronto le cose senza farmi sovrastare dagli eventi	1	2	3	4	5	6	7	1	2	3	4	5	6	7
4. Sono amico/a di me stesso/a	1	2	3	4	5	6	7	1	2	3	4	5	6	7
5. Sento di poter gestire molte cose allo stesso tempo	1	2	3	4	5	6	7	1	2	3	4	5	6	7
6. Sono determinato/a	1	2	3	4	5	6	7	1	2	3	4	5	6	7
7. Posso affrontare momenti difficili perché ho già affrontato delle difficoltà in passato	1	2	3	4	5	6	7	1	2	3	4	5	6	7
8. Ho auto-disciplina	1	2	3	4	5	6	7	1	2	3	4	5	6	7
9. Mantengo interesse nelle cose	1	2	3	4	5	6	7	1	2	3	4	5	6	7

	Fortemente in disaccordo							Fortemente in accordo						
10. Di solito trovo qualcosa per cui sorridere	1	2	3	4	5	6	7	1	2	3	4	5	6	7
11. Il credere in me stesso/a mi aiuta a superare i momenti difficili	1	2	3	4	5	6	7	1	2	3	4	5	6	7
12. In una situazione di emergenza, io sono qualcuno su cui le persone possono generalmente contare	1	2	3	4	5	6	7	1	2	3	4	5	6	7
13. La mia vita è piena di significato	1	2	3	4	5	6	7	1	2	3	4	5	6	7
14. In una situazione di difficoltà riesco di solito a trovare un modo per uscirne	1	2	3	4	5	6	7	1	2	3	4	5	6	7

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**Author contribution** SC: substantial contributions to the conception or design of the work, analysis and interpretation of data for the work, drafting the work; IC: the acquisition of data for the work; AC: the acquisition of data for the work; RB: the acquisition of data for the work; MP: revising it critically for important intellectual content; MTP: revising it critically for important intellectual content; PB: revising it critically for important intellectual content; RE: substantial contributions to the conception or design of the work, analysis and interpretation of data for the work, revising it critically for important intellectual content, final approval of the version to be published.

**Data availability** The datasets generated during and/or analyzed during the current study are available from the corresponding author on reasonable request.

**Code availability** Not applicable.

### Declarations

**Ethics approval** The project was performed by the local Ethics Committee (Campania Sud).

**Consent to participate** Informed consent was obtained from all individual participants included in the study.

**Consent for publication** The participants signed informed consent regarding publishing their data.

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