Assessing positive and negative experiences: validation of a new measure of well-being in an Italian population

Valutare le esperienze positive e negative: la validazione di una nuova misura del benessere in una popolazione italiana

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SUMMARY. The aim of this study is to explore the psychometric properties of an affect scale, the Scale of Positive and Negative Experience (SPANE), in an Italian-speaking population. The results of this study demonstrate that the Italian version of the SPANE has psychometric properties similar to those shown by the original and previous versions, and it presents satisfactory reliability and factorial validity. The results of the Confirmatory Factor Analysis support the expected two-factor structure, positive and negative feeling, which characterized the previous versions. As expected, measures of negative affect, anxiety, negative future expectances, and depression correlated positively with the negative experiences SPANE subscale, and negatively with the positive experiences SPANE subscale. Results of this study demonstrate that the Italian version of the SPANE has psychometric properties similar to those shown by the original and previous versions, and it presents satisfactory reliability and factorial validity. The use of this instrument provides clinically useful information about a person's overall emotional experience and it is an indicator of well-being. Although further studies are required to confirm the psychometric characteristics of the scale, the SPANE Italian version is expected to improve theoretical and empirical research on the well-being of the Italian population.

KEY WORDS: subjective well-being, positive emotions, negative emotions, affect, positive experiences, negative experiences.

RIASSUNTO. Lo scopo del presente studio è quello di esplorare le proprietà psicometriche di uno strumento di misurazione dell'affetto, la Scala di Esperienze Positive e Negative (SPANE), all'interno di una popolazione italiana. Gli esiti dell'analisi fattoriale confermativa comprovano l'attesa struttura a due fattori, sentimenti positivi e negativi. Le correlazioni con altre dimensioni (per es., ansia, depressione, affetto, aspettative future) confermano i risultati ottenuti con le precedenti versioni della scala: affetto negativo, ansia, depressione e aspettative future negative correlano positivamente con la subscala di esperienze negative e negativamente con la subscala di esperienze positive dello SPANE. In conclusione, i risultati del nostro studio dimostrano che la versione italiana dello SPANE presenta caratteristiche psicometriche simili a quelle mostrate dalla versione orginale e da successive validazioni dello strumento in altre lingue. La scala presenta, inoltre, affidabilità e validità fattoriale. Lo SPANE è un indice utile dal punto di vista clinico che può fornire informazioni rilevanti circa l'esperienza emotiva e il benessere della persona. Nonostante ulteriori studi siano necessari per confermare le caratteristiche psicometriche della scala, la presente validazione della versione italiana dello SPANE può contribuire ad ampliare la ricerca nell'ambito del benessere in una popolazione Italiana.

PAROLE CHIAVE: benessere soggettivo, emozioni positive, emozioni negative, esperienze positive, esperienze negative.

INTRODUCTION

Two-factor model of affect

Affect is a central theme in the field of psychology, and many studies have been conducted on this topic. For instance, well-being studies shown that emotional experience, together with life satisfaction, is a central component of subjective well-being, which includes experiencing high life satisfaction, positive emotions and low negative emotions[1].

Watson and Tellegen[2] summarized the evidence and presented a two-factor model composed of two highly distinctive orthogonal dimensions called Positive Affect (PA) and Negative Affect (NA). Although some investigators still endorse a model characterized by unrotated dimensions, referred to as pleasantness-unpleasantness and arousal[3], the varimax-rotated factors proposed by Watson and Tellegen are the most widely used in studies on affect.

Following this model, emotional experience has been defined as being dominated by these two broad and independent dimensions. PA is a general dimension that reflects the

extent to which a person feels excited, enthusiastic, alert, and active[4,5]. High PA corresponds to a state characterized by full concentration, high energy, and pleasurable engagement. By contrast, low PA is distinguished by lethargy and sadness. NA, on the other hand, reflects subjective distress and unpleasant engagement. The NA factor includes a wide range of aversive mood states, such as guilt, anger, disgust, contempt, fear, scorn, and depression[4,5], whereas low negative affect corresponds to a state of calmness and serenity[4]. Negative and positive affect can represent either a state (i.e. transient fluctuations in mood) or trait (i.e. stable individual differences in general affective level) dimension. Specifically, these traits, referred to as negative affectivity (or trait NA) and positive affectivity (or trait PA)[6], denote tendencies to experience the associated state mood factor. Thus, trait NA is linked to the dominant personality factor of anxiety/neuroticism, whereas trait PA is related to extroversion[7,8]. Individuals who report high negative affectivity are more likely to experience significant levels of dissatisfaction and distress, they are introspective, and they tend to focus on the negative side of life. By contrast, individuals with low negative affectivity are more likely to be secure, self-satisfied, and content[8]. High trait PA is associated with happiness, a full and interesting life, and energy[6-9]. Moreover, numerous studies have indicated that anxiety and depression both involve NA, whereas only low PA is related to depression[10-13].

Affect scales

Given the two-factor structure of affect, numerous scales have been developed to assess pleasant and unpleasant emotions in a variety of research areas[4,14,15], but the most widely used scale is the Positive and Negative Affect Schedule (PANAS)[4]. This tool consists of two subscales, one measuring PA and one measuring NA. This scale presents some limitations. First, PANAS was designed to measure a specific conception of emotional well-being and ill-being; thus, it includes some items that are not usually considered feelings (e.g., "strong", "alert", "active", and "determined"). Second, PANAS omits some core emotional feelings that are considered important to well-being (i.e. "pride", "envy", "jealousy", "contentment", "joy", "happiness", and "love"). Third, this scale omits other feelings that are widely believed to be core emotional feelings in some individuals and certain situations and does not consider the difference in the desirability of feelings in different contexts or cultures[16,17]. Lastly, some feelings, such as anxiety, are represented by a number of similar adjectives (i.e. "jittery," "nervous," "scared," and "afraid"). Therefore, the inclusion of various synonyms for a single feeling means that the scale is heavily weighted toward one specific type of feeling.

Scale of Positive and Negative Experience

To overcome these limitations, the new Scale of Positive and Negative Experience (SPANE) developed by Diener and his colleagues[18] has been used to assess a broad range of pleasant and unpleasant feelings by asking people to report their feelings, in terms of their duration, after recalling their activities and experiences during the previous 4 weeks. This

approach is coherent with Diener and colleagues'[19] conceptualization that overall judgements of subjective well-being, as for instance satisfaction with life, are based more on the frequency of an experience than on its intensity. Furthermore, the authors suggested that the amount of time having experienced a feeling might be more comparable among the respondents than the intensity of their feelings[18]. Moreover, the reference time, "4 weeks", is short enough in order to permit to the person to recall actual feelings and experiences instead of refer to general self-concepts. In the same way, this scale is based on a time period that allows avoiding to refer just to a short-lived mood.

SPANE assesses the full range of positive and negative experiences, including specific feelings that may be defined by one's culture. It includes items that reflect all types of feelings. The emotions used permit to investigate the major emotions theorized by the many of the affect theories. In the same time, using terms as "pleasant" or "unpleasant", "positive" or "negative" allow to investigate also other negative or positive feelings making it possible to assess the full range of possible desirable and undesirable experiences. Moreover, using the SPANE is possible also to gather all levels of arousal for both negative (e.g. sad, angry, afraid) and positive (e.g. joy, happy, contented) feelings. It also assesses feelings such as interest, flow, boredom, pain, engagement, and physical pleasure, which are not considered in most of the other scales[18]. The scale is composed of 12 items, 6 related to positive experiences and 6 related to negative experiences. The scores of negative and positive feelings can be combined to create a balance score (i.e. SPANE-B). Regarding both the positive and negative items, 3 are more specific (e.g. joyful, afraid), and 3 are more general (e.g. good, bad).

The original version of the SPANE showed good psychometric properties (Cronbach between .81 and .89), and performed well in terms of convergent validity and reliability with others measures related to well-being, emotions, life satisfaction, and happiness. The negative and positive subscales correlated significantly with each other (r=-.60)[18]. Validations in Portuguese and Japanese showed similar results[20-22].

The aim of this study is to assess the psychometric proprieties of the SPANE in an Italian-speaking population. First, using the Italian translation already provided by the original authors, we examined the component factors and internal consistency of the Italian version of the scale. Second, we assessed the factorial validity with confirmatory factor analysis (CFA). Finally, we explored the convergent validity of the scale by evaluating its correlations with other measures linked to the affect dimension. We hypothesize that the Italian version of the SPANE will present the same factor structure and good internal consistency as the previous English, Portuguese, and Japanese versions[18,20-22]. We expect that the negative SPANE subscale will correlate positively with anxiety, negative future expectancies, depression and the negative PANAS subscale, and negatively with the positive SPANE and PANAS subscales and positive expectancies. Moreover, we expect that the positive SPANE subscale will correlate positively with the positive PANAS subscale and positive future expectancies, and negatively with depression, anxiety, negative future thinking and the negative SPANE and PANAS subscales.

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METHODS

Participants were recruited through online public social networks and our research group's Facebook page. Then, participants asked other persons (relatives, friends, partners, and acquaintances) to take part to the study by completing questionnaires on the Survey Monkey platform. The combined sample consisted of 345 participants, who voluntarily agreed to be involved in the study. The sample was composed of 34.8% (n=120) men and 65.2% (n=225) women, with an average age of 33.5 years (SD=12.20.; range: 18-80 years old). All participants were native Italian speakers. Regarding education, 2.6% (n=9) had completed middle school, 20.3% (n=70) had completed a high-school level, and 77.1% (n=266) reported a university level of instruction. Demographics are similar to what would be expected according to SPANE original validation (67.9% women, all the sample were university students)[18] and the Italian validation of the PANAS (62.9% women, mean age 27.9, with an average to high level of education)[23]. On 250 subjects who completed the BDI-II, 21 (8.4%) reported a moderate level of depression, and 9 (3.6%) moderate-severe depression. Mean score on the BDI was 9.61 ± 7.70 (range: 1-39). On 256 subjects who completed the STAI-Y, 102 (39.84%) participants scored more than 40 at the STAI-Y (t), and 131 (39.84%) scored more than 40 at the STAI-Y (s). Mean score on the STAI-Y (t) was 43.65 ± 9.26 (range: 26-72), and on the STAI-Y (s) was 42.73 ± 12.23 (range: 22-76).

Measures

The SPANE is a brief 12-item scale with six items devoted to positive experience and six items designed to assess negative experience. Each item is scored on a scale ranging from 1 ("very rarely or never") to 5 ("very often or always"). The positive and negative scales are scored separately. Both the total positive (SPANE-P) and negative (SPANE-N) scores can range from 6 to 30. The two scores can be combined by subtracting the negative score from the positive score, and the resulting SPANE-B scores can range from -24 to 24. The SPANE Italian translated version already provided by the original authors was used in the present study[18]. The internal consistency coefficients found for the SPANE subscales in the present study were α=.85 and α=.88 for negative and positive affect, respectively.

The PANAS[2] consists of two subscales, one measuring PA and one measuring NA. Each subscale consists of 10 items, scored on a 5-point Likert scale ranging from 1 (very slightly or not at all) to 5 (extremely). The PANAS subscales have been shown to be uncorrelated and have good internal consistency and test-retest reliability[2] [3]. The Italian validated version of the PANAS was used in this study[23]. The internal consistency coefficients found for the PANAS subscales in the present study were α=.91 for negative affect and α=.90 for positive affect.

The Beck Depression Inventory-II (BDI-II)[24] has been used to assess depression. This self-report instrument is the second version of the widely used Beck Depression Inventory (BDI)[25], and it consists of 21 items. Each item is rated on a 4-point scale (0-3). Analyzing the psychometric properties and the factor structure of the BDI-II in both analogue and clinical populations, Beck and colleagues[24] found that it has both good internal consistency (α's of 0.92 and 0.93, respectively) and 1-week test–retest reliability (r=0.93). It has been found to be a valid indicator of depression and to have good diagnostic discrimination[26] [26]. The internal consistency coefficient for the Italian version of the BDI-II in the present study was α=.89.

The Spielberger State-Trait Anxiety Inventory- Form Y (STAI-Y)[27] has been used to evaluate anxiety. It consists of a brief self-report questionnaire designed to measure and differentiate between trait (a stable personality trait) and state (a temporary and fluctuating condition) anxiety. The STAI-Y consists of two subscales containing 20 items each. The first subscale assesses state anxiety by asking the individual to report how he/she feels, from 1 ("not at all") to 4 ("very much so"), at a particular point in time (e.g., satisfied, frightened). The second subscale assesses trait anxiety by asking to people to report how they generally feel (e.g., inadequate, rested) from 1 ("almost never") to 4 ("almost always"). It is a reliable and sensitive measure of anxiety (α=.90 for trait scale, α=.93 for state scale). Moreover, test-retest coefficients ranged from .73 to .86 and .16 to .62 for scores on the trait and state scales, respectively[27,28]. In this study, the Italian validated version of the STAI-Y[29] was used. The internal consistency coefficients for the Italian version of the STAY-Y subscales in the present study were α=.94 and α=.91 for the state and trait scales, respectively.

The Subjective Probability Task (SPT)[14] has been used to assess future expectancies. It is composed of 30 items rated on a 7-point Likert scale. The participant has to estimate the probability of each item happening to him/her in the future, from 1 ("not at all likely to occur") to 7 ("extremely likely to occur"). The SPT consists of two subscales: one containing 20 items referring to negative expectancies (NE), and the other with 10 items referring to positive expectancies (PE). An independent subtotal for each subscale has to be calculated. The authors of the original version of the SPT reported that the scale has good internal consistency (α=.90 for the negative items and α=.86 for the positive items). The two subscales also show good discriminant validity[14]. In this study, the Italian validated version of the SPT was used (Corno et al. submitted). The internal consistency coefficients for the Italian version of the SPT subscales in the present study were .91 and .86 for negative and positive expectancies, respectively.

Procedure

Participants were recruited through e-mail, social network, and word of mouth, and they were directed to a dedicated online survey. The survey was carried out using the SurveyMonkey web platform (https://www.surveymonkey.com). Before the survey was administered, participants were informed that the study was voluntary and confidential, and they signed a consent form stating their willingness to participate. First, demographic data (i.e. gender, age, education level, nationality, and country of residence) were collected. The translated version of the SPANE and the Italian validated version of the STAY-Y, BDI-II, and PANAS were administered, in that order. Ethical approval was obtained, as part of a wider study, from the University of Valencia, Spain, Research Ethics Committee.

Data analysis

Construct validity of the Italian SPANE was estimated using confirmatory factor analysis (CFA) conducted with the EQS program, version 6.1, respectively. Cases with missing data were eliminated from final analysis (n=49). The kurtosis and Skewness of the items were analyzed with SPSS software, version 20 (SPSS Inc., Chicago, Illinois), to verify their normal distribution. Internal consistency of the Italian SPANE subscales was assessed using Cronbach's α coefficient. This coefficient ranges from 0 to 1; higher values correspond to better reliability. The analysis assesses the correlation of each item with the subscale, as well as the change in

the Cronbach's α coefficient if an item is excluded. Criterion validity of the Italian SPANE was examined by calculating the correlations of each subscale with measures of affect, depression, future expectances, and anxiety. The discriminant validity of the SPANE subscales was tested by calculating item-total correlations for the positive and negative items.

Independent Samples T-Tests were conducted for all the measures used in the study, in order to examine gender differences.

RESULTS

Table 1 shows the means and standard deviations of all the measures included in the study.

Confirmatory Factor Analysis of the SPANE

The factorability of the SPANE items was examined. The assessment of the distribution of data showed that our data were characterized by a normal distribution (Skewness range: -.518-.764; Kurtosis range: -.659-.532). A CFA with the Robust Maximum Likelihood estimation method was used

to test the Italian version of the SPANE. First, a one-factor model (Model 1) was fit to the data to serve as a baseline and identify salient sources of error. This model did not fit the data well (Table 2). Second, a model (Model 2) containing two correlated first-order factors for the SPANE was tested. This latter model agrees with the original version of the questionnaire[18] (Table 2). The fit indexes indicated that the two-factor structure of the Italian version of the SPANE was a better representation than the one-factor model. As Figure 1 shows, all factor loadings were above .40.

Reliability: internal consistency

The internal consistency coefficients for the two subscales of the SPANE were excellent (for negative experiences α=.85, and for positive experiences α=.88). Internal consistency (Cronbach's a) for SPANE B was .91.

Table 2. Confirmatory Factor Analysis (CFA) of the Italian version of the SPANE (N=345).

	CFI	RMSEA	90%CI RMSEA	sbX^2	df	p
Model 1	.852	.114	(.099, .129)	227.5597	54	p<0.0.01
Model 2	.981	.042	(.017, .062)	75.7687	53	p<0.001

Table 1. Descriptive statistics for all the measures assessed in the present study.

	Men	Women	t	d
SPANE-N	12.99 (SD 4.84)	15.56 (SD 4.67)	-4.38**	-.72
SPANE-P	20.50 (SD 4.51)	20.10 (SD 4.36)	.73	.07
SPANE-B	7.51 (SD 8,21)	4.53 (SD 8.17)	2.93*	.36
PANAS-N	16.86 (SD 6.54)	21.78 (SD 8.07)	-4.48**	-.64
PANAS-P	29.72 (SD 6.97)	27.22 (SD 6.83)	2.60	.36
STAI-Y (s)	39.03 (SD 10.05)	44.32 (SD 12.75)	-3.23*	-.44
STAI-Y (t)	39.82 (SD 7.62)	45.30 (SD 9.42)	-4.51**	-.61
BDI-II	6.52 (SD 6.14)	10.93 (SD 7.96)	-4.2**	-.59
SPT-PE	44.71 (SD 10.39)	44.38 (SD 9.52)	.264	.034
SPT-NE	52.26 (SD 17.51)	55.17 (SD 18.53)	-1.22	-.16

Legend. M= mean; SD = standard deviation; **p<.001; *p<.05. Cohen (1988) defines d= 0.2 as a "small" effect size, d= 0.5 as "medium" and d= 0.8 as "large"; SPANE-N= Scale of Positive and Negative Experiences - Negative Experiences; SPANE-P= Scale of Positive and Negative Experiences - Positive Experiences; SPANE-B = Scale of Positive and Negative Experiences - Balanced; PANAS-N= Positive and Negative Affect Schedule - Negative Affect; PANAS-P= Positive and Negative Affect Schedule - Positive Affect; STAI-Y (s)= State-Trait Anxiety Inventory-Form Y (state); STAI-Y (t)= State-Trait Anxiety Inventory-Form Y (trait); BDI-II= Beck Depression Inventory-II; SPT-PE= Subjective Probability Task -Positive Expectancies; SPT-NE= Subjective Probability Task - Negative Expectancies.
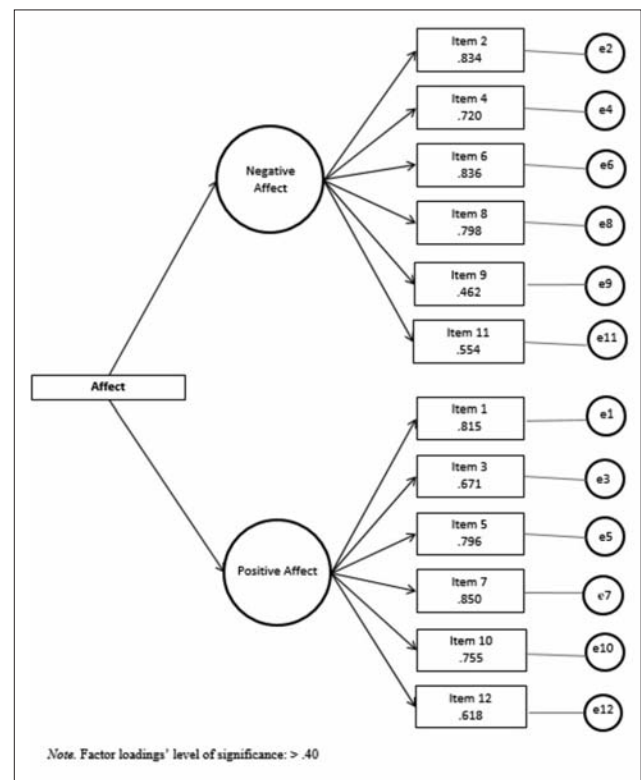

Note. Factor loadings' level of significance: > .40

Figure 1. Factor loadings of the items for the Italian version of the SPANE (N=345).

Correlation analyses

Correlation coefficients are presented in Table 3. All correlations were significant at p<.001. As expected, measures of negative affect, anxiety, negative expectances, and depression correlated positively with the negative experiences SPANE subscale, and negatively with the positive experiences SPANE subscale and the SPANE-B. Positive affect and positive expectances correlated negatively with the negative experiences SPANE subscale, and positively with the positive experiences SPANE subscale and the SPANE-B. Moreover, the negative correlation reported in the original study (r=-.60)[18] between the two factors was confirmed by our findings, which show a lower correlation between the two SPANE subscales (r=-.50).

DISCUSSION

The aim of the present study was to assess the psychometric proprieties of an affect scale, the SPANE[18], in an Italian-speaking population. Results of this study shown that the Italian version of the SPANE is a reliable instrument that can provide useful information about a person's emotional experiences and it can be appointee as an indicator of well-being. The results of this study demonstrate that the Italian version of the SPANE has psychometric proprieties similar to those shown by the original[18] and previous versions, and it presents satisfactory reliability and factorial validity. The results of the CFA support the expected two-factor structure, positive and negative feeling, which characterized the original English version[18], the Japanese version[21,22], and the Portuguese[20] version. All Cronbach's alpha coefficients for the SPANE subscales

indicate excellent internal consistency (positive feelings: α=.88, negative feelings: α=.85, SPANE balanced: α=.92). Correlation results confirmed our hypothesis. As expected, the negative SPANE subscale correlates positively with anxiety, negative future expectancies, depression, and the negative PANAS subscale, and negatively with positive expectancies and the positive SPANE and PANAS subscales. Furthermore, and consistent with the nature of the measured construct, the positive SPANE subscale correlates positively with the positive PANAS subscale and with positive future expectancies, and negatively with depression, anxiety, negative future thinking and the negative SPANE and PANAS subscales. In addition, regarding the correlation between the positive and negative SPANE subscales in the present study (r=-.50), it is lower than the one found for the original (r=-.60) version, but higher than those reported for the Portuguese and Japanese versions (respectively, r=-.47 and r=-.28)[20-22].

SPANE has advantages over other affect measures. First, it is short (12 items) and easy to administer. Second, because the SPANE is composed of and assesses general feelings (e.g. "positive", "negative"), it can be applied across many cultures. Furthermore, the scale can also reflect feelings such as physical pleasure, engagement, pain, interest, and boredom, which are not taken into consideration in most measures of feelings. Third, based on Diener and colleagues'[19] conceptualization about the importance of frequency (and not intensity) in the assessment of happiness, the SPANE elicits answers based on the frequency of an emotion and not its intensity, unlike other measures.

Some limitations of the study should be considered. First, test-retest analyses were not conducted and therefore was not possible to conclude about the stability of the scale in this population. Further studies need to establish the temporal

Table 3. Correlations between the SPANE and measures of affect, anxiety, depression, and future expectancies (N=345).

	SPANE-P	SPANE-N	SPANE-B	PANAS-P	PANAS-N	STAI-Y (s)	STAI-Y (t)	BDI-II	SPT-PE	SPT-NE
SPANE-P	-									
SPANE-N	-.50**	-								
SPANE-B	.86**	-.88**	-							
PANAS-P	.48**	-.344**	.49**	-						
PANAS-N	-.37**	.66**	-.62**	- 34**	-					
STAI-Y (s)	-.49**	.58**	-.66**	-.57**	.76**	-				
STAI-Y (t)	-.44**	.61**	-.63**	-.50**	.73**	.76**	-			
BDI-II	-.44**	.58**	-.61**	-.52**	.70**	.71**	.71**	-		
SPT-PE	.52**	-.26**	.46**	.68**	-.32**	-.50**	.45**	-.36**	-	
SPT-NE	-.19**	.44**	-.39**	-.26**	.57**	.50**	.57**	.52**	-.14**	-

Legend. Correlations were significant at p<.001; SPANE-P= Scale of Positive and Negative Experiences - Positive Experience; SPANE-N= Scale of Positive and Negative Experiences - Negative Experiences; SPANE-B= Scale of Positive and Negative Experiences - Balanced; PANAS-P= Positive and Negative Affect Schedule - Positive Affect; PANAS-N= Positive and Negative Affect Schedule - Negative Affect; STAI-Y (s)= State-Trait Anxiety Inventory- Form Y (state); STAI-Y (t)= State-Trait Anxiety Inventory- Form Y (trait); BDI-IF Beck Depression Inventory-II; SPT-PE= Subjective Probability Task-Positive Expectancies; SPT-NE= Subjective Probability Task-Negative Expectancies.

stability in Italian populations. Second, we used a web-delivered administration procedure. It is unclear if this might have influenced our findings, however online questionnaires have successfully been used in psychology research with equivalent psychometric properties[30,31].

In conclusion, the SPANE Italian version proved to be a reliable and valid measure of affect and it is expected to improve theoretical and empirical research on the well-being of the Italian population. Nevertheless, it could be note that the psychometric findings might differ for different subgroups. It could be interesting, for instance, to investigate the proprieties of the SPANE Italian version among a clinical population. The averages of the scores reported by the participants for the BDI-II and STAI-Y, are in fact in line with the means of normative data[32]. Therefore, further studies are necessary to come to a final appraisal of the scale. Finally, it could be interesting and useful to examine correlations between the scores on the Italian version of the SPANE and scores on other measures of well-being, such as those used in the original study about satisfaction with life (SLS)[33], flourishing (FS)[18], happiness (SHS)[34], Fordyce's single item measure of happiness, optimism (LOT-R)[35], and loneliness (UCLA Loneliness Scale)[36]. Overall, the Italian SPANE is ready for further use in research and practice. This study adds a new tool to the repertoire of measures that can be used by researchers interested in affect and well-being with the Italian population.

Conflict of interests: the authors declare they have no competing interests.

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