

Development and validation of an abridged version of the Social Provisions Scale (SPS-10) in Italian

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Summary

The Social Provisions Scale-10 item (SPS-10) is a shortened version of the 24-item Social Provisions Scale developed by Cutrona and Russell in 1987. The SPS-24 originally consisted of six subscales that measure the availability of social support: emotional support or attachment, social integration, reassurance of worth, material help, orientation and opportunity for nurturance. Each subscale comprises four items, two formulated positively and two negatively, for a total of 24 items. The SPS-10 retains the original subscales, except for opportunity for nurturance, and includes only negatively worded items. The aim of this paper is to present the validation of the Italian version of this instrument. The study population consisted of 483 pregnant Italian women with a mean age of 33 years recruited from two large hospitals of northwestern Italy from January 2010 to February 2012 during scheduled routine follow-up visits or when they attended the antenatal classes. The SPS-10 showed a strong concurrent validity with the original SPS-24 scale ($r = 0.896$). All its items were highly correlated with the total score and its internal consistency was high (Cronbach's $\alpha = 0.809$).

Introduction

Maternity is condition in which new mothers experience a loss of routines and prior identity, have to face a number of challenges and have to acquire new skills. Social support may ease this transition through exposure to models already experienced and contact with others who share values and priorities associated with motherhood and may provide positive reinforcement^{1,2}. Many studies have reported that the lack of social support, i.e. lack of emotional and practical help from the partner and family members, is strongly associated with depressive symptoms both during pregnancy or/and in the postpartum period and with negative maternal emotional well-being³⁻⁵. Thus, early identification of lack of social support during pregnancy, mainly if associated with depressive symptoms, may orient professionals on psychosocial interventions to prevent perinatal disorders. In the framework of a large Italian project aimed to pre-

The construct validity was investigated using a two-level confirmatory factor analysis (CFA). This analysis confirmed that the items conform to a structure consisting of 5 first-level dimensions (subscales) and one second-level dimension that measures the overall perception of social support. The CFA model had excellent goodness of fit to the data.

The total score of SPS-10 was significantly associated with the presence of antenatal depressive symptoms (ADS) in a logistic regression model, and this association was stronger than that found between the total SPS-24 and ADS. Overall, these analyses suggest that the SPS-10 is a reliable and valid instrument for measuring the availability of social support with the advantage of shorter administration time compared with the original SPS-24 scale. It is therefore ideal for administration in busy clinical settings for screening purposes and in epidemiological studies.

Key words

Pregnancy • Social support • Attachment • Depression

vent depression in women during pregnancy and in the postpartum period, we carried out a broad assessment of the risk factors of depression. Among the available instruments to assess social support, we choose the Social Provision Scale (SPS) by Cutrona & Russell⁶ that includes six subscales based on social needs identified by Weiss in 1973: attachment, reassurance of worth, reliable alliance, social integration, guidance, opportunity for nurturance. The SPS has been shown to have excellent psychometric properties in several studies^{7,8} carried out in different fields, which suggest that the perception of social support is one of the best predictors of mental distress and quality of life.

Notably, in a study of first-time mothers, Cutrona² found that the provisions of reliable alliance, reassurance of worth, social integration and guidance were predictive of postpartum depression. Women without these provisions were more likely to become depressed after their pregnancy.

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In the original validation study⁶, the instrument showed good concurrent validity with several instruments: the satisfaction with support received, the size of social network and support behavior and attitudes towards the support. However, this scale had a weak correlation with social desirability $r = 0.12$. As to its construct validity, the instrument was negatively related to the Beck Depression Inventory⁹ and neurosis as measured by the Eysenck Personality Inventory. The Social Provisions Scale (SPS) has been translated and validated in Quebec by Caron¹⁰ on a sample of 790 people. The internal consistency of the instrument was excellent ($\alpha = 0.96$) and for the subscales it varied between 0.73 and 0.88. The temporal stability (test-retest reliability) of the instrument was very good ($r = 0.86$). Factor analyses carried out in the population of Quebec confirmed the multidimensional structure of the instrument.

The SPS has been used in many studies in Canada in the general population¹¹, in low-income people, in people with schizophrenia and their families, in people with a previous suicidal attempt and families with children in the nursery school⁷. These studies showed that social support measured with this scale was one of the best predictors of psychological distress and quality of life.

The aim of this paper is to illustrate the validation process of an abridged version of that scale (SPS-10) in Italian, obtained by reducing it from 24 items to 10 items to produce a reliable and valid instrument for measuring the perceived availability of social support.

Methods

Participants

The study population consisted of pregnant Italian women recruited from two large hospitals of northwestern Italy from January 2010 to February 2012. Women were assessed on a single occasion during scheduled routine follow-up visits or when they attended antenatal classes. In the first case, women were invited to an interview, and in the second case women filled out the study instruments after a group intervention in which they received information about postpartum depression. The study procedures were approved by the Ethics Committee of Niguarda-Ca' Granda Hospital, Italy.

Measures

The study assessments included an ad hoc form to collect socio-demographic information, distressing life events, past psychiatric history and past psychological and/or pharmacological treatment and family history for psychological problems and psychiatric disorders and pregnancy-related variables.

In addition, the Social Provisions Scale (SPS), the Edinburgh Post-natal Depression Scale (EPDS) and Beck Depression Inventory, Short Form (BDI-SF) were administered. The SPS⁶ measures the perception of social support and consists of 24 items expressed as statements, with responses coded on a 4-point scale from strongly disagree (= 1) to strongly agree (= 4). The factor structure was examined in the original paper⁶ and consisted of six first-level factors (attachment, social integration, reassurance of worth, reliable alliance, guidance, opportunity for nurturance) and one second-level general factor. Each factor includes 4 items, 2 with a negative and 2 with a positive formulation. This structure was subsequently confirmed by Perera¹² using a bi-factor structural equation model. The instrument was shown to have a good convergent and discriminant validity. The six factor scores range from 4 to 16 and the total score ranges from 24 to 96. Higher scores denote better perceived support.

The Italian version, translated from the English version, was initially tested by our group in a small pilot sample of women to examine its face validity. Based on the suggestions that emerged during the administration of the instrument, the anchor points of the scale were defined as false (= 1) or true (= 4) and the formulation of some items was improved to make them more comprehensible.

The EPDS¹³ is the most widely used measure of post-partum depression symptoms and is commonly used as a screening tool for prenatal depression symptoms as well¹⁴. The 10 EPDS items do not directly correspond to DSM criteria. They do not include somatic depressive symptoms (appetite change and fatigue) psychomotor agitation/retardation or reduced concentration. Participants based ratings on their experiences and feelings over the previous week. Each item is scored on a 4-point Likert scale from 0 to 3 with possible total scores ranging from 0-30. A higher score indicates higher reported frequency or severity of symptoms.

A systematic review¹⁵ has confirmed that the screening accuracy of the EPDS in diagnosing depression during pregnancy is satisfactory and that the EPDS can be recommended for use for this purpose.

The EPDS was validated in Italian and shown to have a good internal consistency (Cronbach $\alpha = 0.747$); a sensitivity of 0.556 and a specificity of 0.989 were associated with the cut-off score of 11/12¹⁶.

The BDI⁹ is one of the most widely used self-rating scales for measuring depression. Beck and Steer proposed that this scale could be divided in two subscales: cognitive-affective (items 1 to 13) and somatic-performance (items 14 to 21). In the present study, we used the cognitive-affective subscale alone (the so-called BDI short-form (BDI-SF)) to assess depression. Each answer is scored from 0 to 3. Higher total scores indicate more severe depressive symptoms.

Development of the SPS-10

The short version was obtained by retaining five of the six original SPS subscales: emotional support (attachment), social integration, reassurance of worth, material support (reliable alliance) and guidance, which includes advice and information. In the original instrument, each of these scales comprises 4 items - 2 with a positive and 2 with a negative formulation. We kept only negatively worded items because we found that they allow to better capture the lack of social support, while items with a positive formulation elicit stereotypical responses. The total score ranges from 10 to 40, Item scores are inverted so that the higher the score, the stronger the perceived provision of social support.

Consistent with Caron⁷, the subscale that measures the need to feel useful (opportunity for nurturance) was not retained because this dimension of social provisions measures the support provided rather than the support received and because previous studies showed that this dimension has a weaker association with mental health compared with the other subscales. The SPS-10 is provided in the appendix.

Statistical analyses

Descriptive statistics of the total score of the SPS-10 and of the SPS-24 were calculated. To determine the concurrent validity of SPS-10, we calculated Pearson's correlations between each of the 10 items of the SPS-10, its total score and score of the original 24-item scale. In order to verify the fidelity of the SPS-10, the internal consistency was assessed by Cronbach's alpha and compared with that of the original 24 item scale. Then, to investigate the construct validity of the scale, a two-level confirmatory factor analysis of items was carried out.

Each item was specified to load onto only the factor it was designed to measure, with correlations among the six factors freely estimated. The six factors were specified to index a higher-order general factor, in line with previous research^{6,12}. In order to test the goodness of fit of the model, three approximate fit indices were considered: comparative fit index (CFI) and Tucker-Lewis index (TLI), > 0.900 and 0.950 for acceptable and excellent fit, respectively; and root mean square error of approximation (RMSEA), < 0.050 and 0.080 for close and reasonable fit, respectively¹⁷.

Bivariate and multivariate logistic regression models were used to analyse the association between antenatal depressive symptoms (ADS) and SPS total scores and subscale scores. ADS were defined as an EPDS score ≥ 12 or a BDI-SF score ≥ 9 , and/or a score > 0 on item EPDS item 10 or BDI-SF item 7, that assess suicidality, in line with Corbani et al. (2016, submitted). In multiple logistic regression, a forward stepwise procedure was used to include only variables significantly associated with ADS at $p < 0.05$.

Analyses were conducted using IBM SPSS Statistics, version 23.0 and MPLUS, version 7.

Results

The study sample consists of 483 women who completed the SPS questionnaire. Mean age was 33 years, the large majority was married, had a high school diploma or a university degree and had paid maternity leave (Table I). Fewer than 10% reported distressing life events, unemployment and change in work. About one in four reported that pregnancy was unplanned and 12.8% had an at-risk pregnancy. Figure 1 shows the frequency distributions of SPS-10 and

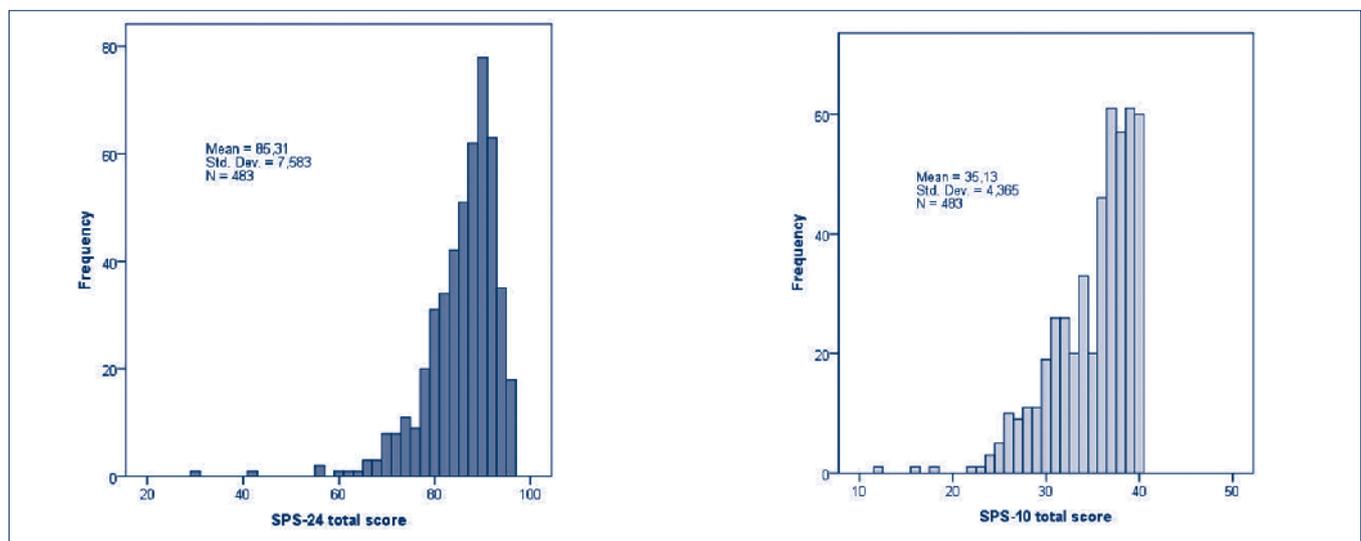


FIGURE 1. Frequency distribution of SPS-10 and SPS-24 scores.

TABLE I. Characteristics of the study sample (N = 483).	
Age, mean (SD)	33.0 (4.4)
Marital status	
Married, n (%)	460 (95.5)
Educational level, n (%)	
None	0
Primary school	0
Middle school	52 (10.8)
High school	240 (49.7)
University degree	189 (39.1)
Missing	2 (0.4)
Living condition, n (%)	
Alone	8 (1.7)
With partner and/or children	449 (93.5)
With original family	12 (2.5)
Other	11 (2.3)
Work, n (%)	
Paid maternity leave	423 (87.6)
Unemployed	30 (6.2)
Change in work	23 (4.8)
Distressing life events, n (%)	
Marital problems	30 (6.2)
Financial problems	36 (7.5)
Bereavement	30 (6.2)
Change of residence	34 (7.0)
Pregnancy-related variables, n (%)	
Planned	343 (71.0)
Unplanned	110 (22.8)
Assisted reproduction	20 (4.1)
Missing	10 (2.1)
Trimester	
First	18 (3.7)
Second	79 (16.4)
Third	383 (79.3)
Missing	3 (0.6)
At risk pregnancy, n (%)	62 (12.8)
Any previous abortion, n(%)	114 (23.6)
Number of children, median (range)	0 (0-5)
Number of pregnancies, median (range)	0 (0-6)
Psychiatric history, n (%)	128 (26.5)
Past treatment n (%)	
Psychological treatment	64 (13.3)
Pharmacological treatment	9 (1.9)
Both	30 (6.2)
None	380 (78.6)
Family history of psychiatric disorders, n(%)	126 (26.1)

SPS-24 scores. The histograms are skewed to the left, indicating that the large majority of the sample perceived strong social support. The SPS-10 score ranged from 12 to 40, mean = 35.1, SD = 4.4, median = 36 and the SPS-24 score ranged from 30 to 96, mean = 85.3, SD = 7.6, median = 87.

Table II shows the correlation of the 10 negative items with the total SPS-10 score and the total SPS-24 score. Notably, the correlation between the total scores of the SPS-10 and SPS-24 was 0.896, denoting an excellent concurrent validity. All the items had medium to strong correlations with the SPS-10, ranging from 0.465 to 0.674 according to Cohen's definition, which sets a threshold of 0.5 for strong correlation (Cohen, 1988).

The internal consistency of SPS-10 scale was very good (Cronbach's alpha = 0.809) and not much inferior to that of the SPS-24 scale (alpha = 0.847).

The confirmatory factor analysis model had a very good fit to the data (CFI = 0.989, TFI = 0.983, RMSEA = 0.049), indicating that the a priori defined structure held true in the study sample (Figure 2). All items had high loadings on the respective factors, ranging from 0.48 to 0.88. We also fitted a model including only first-level factors, and the fit to the data was similar (CFI = 0.99, TFI = 0.982, RMSEA = 0.051).

We then examined the relationship between social support and ADS (Table III). Forty-nine women (10.1%) screened positive for ADS. Three logistic regression models were fit, in which the variables used to predict ADS were the total SPS-10 score, the total SPS-24 score and the SPS-10 subscales, respectively. High levels of perceived social support significantly contributed to decreasing the likelihood of having ADS in each model. Notably, among the five SPS-10 subscales only reassurance of worth was significantly associated with ADS and none of the other scales contributed additional independent information to the prediction of ADS.

Discussion

The present study reports on the validation of an abridged version of the social provisions scale obtained by reducing it from 24 items to 10 items, so as to produce a reliable and valid instrument for measuring the perception of the availability of social support that requires a shorter time to be completed.

The analyses indicate that the SPS-10 possesses excellent psychometric properties. First, it had a strong concurrent validity with the SPS-24, as indicated by the correlation between the total scores of the two scales.

The fidelity of the short version, examined in terms of internal consistency, was satisfactory. The overall alpha of the SPS-10 was slightly lower than the original scale, but still very high.

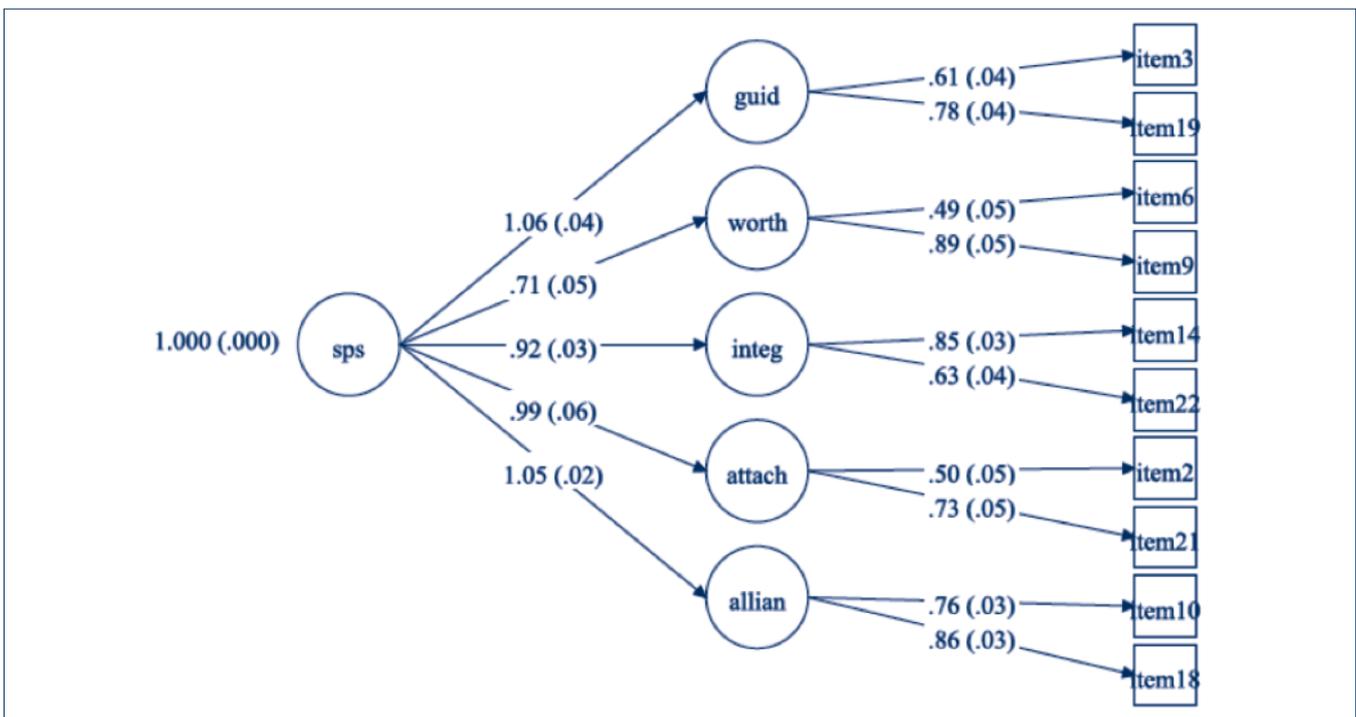
The structure of the scale was robust and consistent with that found in previous studies. Although the fit to the data was similar for the two models comprising only first-level factors (the subscales) and first-level + a second-level factor (the overall perception of social support), the second

TABLE II.

Correlation of the 10 items with SPS-10 and SPS-24 total scores.

	Item2	Item3	Item6	Item9	Item10	Item14	Item18	Item19	Item21	Item22	Total SPS-10	Total SPS-24
Item2	1											
Item3	,285**	1										
Item6	,146**	,168**	1									
Item9	,243**	,306**	,358**	1								
Item10	,257**	,378**	,182**	,349**	1							
Item14	,219**	,318**	,162**	,371**	,380**	1						
Item18	,214**	,266**	,147**	,321**	,365**	,559**	1					
Item19	,222**	,253**	,152**	,276**	,346**	,473**	,597**	1				
Item21	,275**	,277**	,168**	,397**	,358**	,386**	,337**	,398**	1			
Item22	,200**	,154**	,115*	,265**	,259**	,350**	,252**	,298**	,290**	1		
Total SPS-10	,522**	,557**	,465**	,648**	,595**	,674**	,629**	,625**	,663**	,509**	1	
Total SPS-24	,437**	,458**	,395**	,544**	,478**	,661**	,622**	,556**	,584**	,450**	,896**	1

**. Correlation is significant at the 0.01 level (2-tailed).

**FIGURE 2.**

SPS-10 two-level structure. Results from confirmatory factor analysis.

model is more relevant from a clinical point of view because it supports the use of the total score and facilitates clinicians in the interpretation of the scale. The results should be interpreted in light of strengths

and limitations. The strength includes the availability of data from a large sample of women recruited at different trimesters of pregnancy, which can be considered representative of the populations of women that undergo

TABLE III.

Relationship between perceived social support and the presence of antenatal depressive symptoms. Results from 3 logistic regression models.

	B	OR	95% CI	p-value
Model 1				
SPS-10 total score	-0.095	0.910	0.858-0.965	0.002
Model 2				
SPS-24 total score	-0.039	0.962	0.932-0.994	0.019
Model 3				
Reassurance of worth	-0.391	0.677	0.552-0.830	< 0.001

scheduled follow-up visits or attend antenatal classes. Limitations include the cross-sectional study design, which prevents drawing conclusions about impact of the social support on the course of depressive symptoms during the perinatal period, and the restricted range of SPS scores, that are on average higher than those reported for the general population. Fleury et al.¹¹ reported a mean SPS-24 score of 80.7 (\pm 9.0) in a large population sample, which is about five points lower than that found in the present study. A possible interpretation of our results is that social desirability issues may come into play when women are asked to report on possible lack of support from the partner or family members during pregnancy. Alternatively, our results may be genuine, suggesting that pregnant women perceive that their condition takes on a special significance and elicits a strong support from the family and friends. This is likely because in Italy birth rates are very low and families tend to have just one child. An additional limitation is that our sample includes only females, therefore validation in a sample including both genders is warranted.

The availability of a valid Italian short and highly informative instrument to measure the perception of social support has a number of advantages.

First, the perception of poor social support is an important risk factor for depression during pregnancy, affects the sense of well-being¹⁸ and may decrease the ability of the woman to cope with stressful events and the needs of the newborn¹⁹. Thus, the SPS-10 can be a useful screening tool to be administered together with other instruments measuring anxious-depressive symptoms in pregnant women. Information on the lack of social support can be valuable to inform decisions about psychosocial interventions to prevent post-partum depression and its disruptive consequences on women and their newborns. In addition, the SPS-10 might be easily used in other screening contexts such as pre-natal classes, vaccination centres, counselling services provided by different health professionals (paediatricians, midwives, nurses) allowing

to reach a larger number of women and thus strengthening primary prevention measures.

Lastly, social support is acknowledged to be both a protecting factor against mental disorders and a strong predictor of healthcare service utilisation for mental health reasons in general population studies¹¹. Therefore, the SPS-10 can be a useful clinical and research tool to assess perceived social support not only in perinatal and paediatric settings, but also in general medical and mental health settings.

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Conflicts of interest

None.

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ALLEGATO**Scala del Supporto Sociale (SPS-10)**

Le chiediamo di rispondere a questo questionario nel modo più sincero possibile, indicando quanto ritiene vera o falsa ogni affermazione. Non ci sono risposte giuste o sbagliate; nel rispondere, pensi alle persone che la circondano.

Per ogni affermazione, segni con una croce la risposta che meglio descrive i suoi rapporti con gli altri utilizzando questo punteggio: 1= vero; 2= in parte vero; 3= in parte falso; 4= falso

	Vero	In parte vero	In parte falso	Falso
2. Non ho rapporti stretti con altre persone	1	2	3	4
3. Non c'è nessuno a cui posso rivolgermi nei periodi di stress	1	2	3	4
6. Gli altri pensano che io sia incapace in quello che faccio	1	2	3	4
9. Non penso che gli altri non rispettino ciò che faccio	1	2	3	4
10. Se qualcosa andasse storto, nessuno mi aiuterebbe	1	2	3	4
14. Nessuno condivide i miei interessi e le mie preoccupazioni	1	2	3	4
18. Non potrei chiedere aiuto a nessuno, se davvero ne avessi bisogno	1	2	3	4
19. Non c'è nessuno con cui parlerei tranquillamente dei miei problemi	1	2	3	4
21. Non mi sento vicino a nessuno	1	2	3	4
22. A nessuno piace fare le cose che piacciono a me	1	2	3	4