



Original Article

# Psychometric properties of Social Safeness and Pleasure Scale (SSPS)

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## Abstract

**Introduction:** Researches have shown that social safeness is a transdiagnostic vulnerability factor in a wide range of psychological problems. Therefore it seems to be necessary that researchers and clinicians consider this component in their investigations. To achieve this, the first step is to prepare an appropriate measure for evaluating this construct. The aim of this study was to investigate the psychometric properties of Persian version of the Social Safeness and Pleasure Scale (SSPS).

**Materials and Methods:** Translation-back translation was done to prepare the Persian version of SSPS. A convenience sample of 521 students from three universities in Tehran was examined in 2015-2016. To investigate the validity of the scale, construct validity (via exploratory factor analysis and confirmatory factor analysis) and divergent validity were used. Therefore, the total sample was split randomly to two samples of 300 subjects (for exploratory factor analysis) and 221 subjects (for confirmatory factor analysis). For investigation of reliability, Cronbach's alpha and test-retest reliability coefficient were used.

**Results:** Exploratory factor analysis of SSPS's items showed a single factor structure and confirmatory factor analysis confirmed this structure. Cronbach's alpha was 0.91 and test-retest reliability coefficient was 0.82. The divergent validity was verified by calculating the correlation between SSPS and IIP, BDI-II, and SPIN.

**Conclusion:** It seems that the Persian version of the Social Safeness and Pleasure Scale has adequate validity and reliability.

**Keywords:** Psychometric Properties, Reliability, Social Safeness and Pleasure Scale, Validity

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## Introduction

Based on the transdiagnostic theory of Gilbert (1) many psychopathologies can be conceptualized based on the formation, function, and interaction of three interactive systems. These systems are evolutionary and can be seen in other organisms (1-2). These systems are A: the threat- defense system which protects us against danger. This system assesses signs of risk and provokes negative feelings such as fear, anger, and shame. The threat system is overactive in most forms of psychopathology; B:

Drive-seeking and acquisition system is developed to ensure that people search for and achieve resources necessary for survival. This system is sensitive to reward signs and provokes active and energetic positive affects like pride, excitement and elation; C: Soothing system, whose function is to reduce the threat and send the message to the organism system that can relax. This system is sensitive to the general signs of care, intimacy and affiliation and in response produces lower arousal positive affect such as calmness, connectedness and reassurance (1-5). It is believed that the activity of this system is very important in mental health because it decreases the activity of threat system and to some extent drive system (5). The term social safeness was invented to

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address a condition that occurs as a result of soothing system activities (6). On this basis, social safeness is defined as perceiving the social world as safe, warm and soothing. When feeling social safeness, one needs less to defend (threat system activity) or to compete to gain resources (drive system activity) (1,2). It is supposed that people not experienced enough warmth in their initial environments may would have a non-matured or less matured soothing system which results having difficulties in feeling safe and calm. Gilbert believes that difficulty in achieving social safeness is transdiagnostic vulnerability in a range of psychological problems (1,6). In Gilbert's theory, two mechanisms have been proposed to explain the impact of social safeness on psychopathology: first the capacity to achieve compassion towards the self and others in the time of distress is a main skills for achieving adaptive coping in life struggles and protection against psychopathology. Accordingly, it is believed that because people with lower levels of social safeness, don't have feeling of warmth and safeness in their social relationships, they may fail to perceive, search and / or trust the compassion received from others (1,2). On the other hand, in this theory, shame is a self-conscious painful feeling that results from seeing oneself as incomplete individual and assuming that others share this view. Gilbert believes that shame maintains self-destructive behaviors that take role in many forms of psychopathologies and that feeling of social safeness acts as shame antidote (7-9). Studies have been able to provide empirical support for this perspective; which will be addressed below.

Studies have documented that social safeness is negatively associated with some dysfunctional characteristics, such as self-criticism, insecure attachment, fear of being compassionate towards the self, fear of receiving compassion from others, self-alienation, revenge, negative affect, and also avoidant, paranoid, and borderline related traits (3,5,10-12). Furthermore, it has been shown that social safeness is negatively correlated with a number of adverse environmental factors such as parental rejection as well as parental over protection (4). In contrast, social safeness has been positively correlated with positive mental health variables such as self-esteem, compassion towards the self, secure attachment, positive affect, life satisfaction, perceived social support, content, joy, love, and excitement (3-6,11) and even physical health-related variables such as heart rate variability (HRV) (13). In addition, this construct is negatively related to symptoms of depression, anxiety, stress,

cyclothymia, dysthymia and irritability (3,5,14) and cortisol level (13).

In sum, the researches support this hypothesis that social safeness is an important variable in determining mental health. Therefore it seems to be necessary that researchers and clinicians consider this component in their investigations. To achieve this, the first step is to prepare an appropriate measure to evaluate this construct.

Social Safeness and Pleasure Scale (SSPS) is an 11- item scale developed by Gilbert et al. (6) to measure social safeness. The SSPS has been widely used to assess social safeness construct. The scale measures the extent to which people usually experience their social world as safe, warmth and soothing. The items are related to the sense of belonging, acceptance and warmth from others. Each item of the SSPS is rated on a Likert scale from 1(almost never) to 5 (almost all the time); so, the total scores of the SSPS range from 11 to 55. The Internal consistency of the scale was excellent the Chronbach's alpha ranges from 0.91 (in Gilbert et al. study (6)); to 0.96 (in Kelly and Dupasquier study (4)). In addition Gilbert et al. (6) reported a single-factor structure for this scale. Furthermore, the scores on SSPS were positively correlated with content, joy, love, excitement and negatively correlated with cyclothymia, dysthymia and irritability.

This measure has been translated to a number of languages. For example, Pinto Gouveia, Matos and Dinis (as cited in 14) confirmed the reliability and validity of the Portuguese version of SSPS. In this study, Cronbach's alpha was 0.91. In Akin, Uysal, Özkara, and Bingöl (15), Cronbach's alpha was 0.82 for Turkish version. In addition, this study confirmed the unidimensional structure of the scale using confirmatory factor analysis. To the best knowledge of the authors, there is no published study on the psychometric properties of the SSPS amongst Iranian population. Accordingly, the aim of this study was to investigate the psychometric properties of a Persian language version of the Social Safeness and Pleasure Scale (SSPS) in a student sample.

## Materials and Methods

Data collected from three groups of students studying at the universities of Tehran, Shahed and Islamic Azad in the educational year of 2015-2016 were used in this study. The convenience sampling method was used. The main aim of this study was to examine the factor structure of the SSPS, using exploratory and confirmatory analyses. According

to Brown (16), exploratory and confirmatory factor analyses of a given scale should be examined in two independent samples. The sample sizes for each of the two analyses were calculated separately. According to Comrey and Lee (17) 300 subjects is acceptable for an exploratory factor analysis. Meyers et al (18), also recommended that the sample size of 200 is appropriate for confirmatory factor analysis. Thus, the total sample size of 500 is required for exploratory factor analysis (300 cases) and confirmatory factor analysis (200 cases). Taking into account of the number of dropouts; we added 20% to this number, so the SSPS and other study measures were administrated to 600 university students. Completed data obtained from 521 of 600 questioners. Of these 521 completed questionnaires 300 were randomly allocated to exploratory factor analysis and 221 randomly allocated to confirmatory factor analyses.

### Research instruments

The following tools were used to collect data:

- *Social Safeness and Pleasure Scale (SSPS)*: The SSPS has been developed by Gilbert et al (6). The scale contains 11 items. For the purpose of this study the scale was translated from English into Persian (Farsi) language. Then, three bilingual academic psychologists compared the translated version of the SSPS with the original one. The problems were solved by agreement amongst these translators. In the next stage, the Persian version of SSPS was back translated into English language by a translator who had not been involved in the process of translation (the back-translation stage). The first author compared the back-translated version of the SSPS with the original text to determine to what extent they match to each other. For items that did not match well with the original text, the translation – back translation process was repeated until achieving acceptable match. The final version of the back translation was sent to developer of the scale (Gilbert) for final approval. Gilbert and Basran confirmed this version. In this way, the final version of SSPS obtained.

- *Inventory of Interpersonal Problems (IIP-32)*: The 32-item version of inventory of interpersonal problems was developed by Barkham, Hardy and Startup (19). This is a self-report instrument asks about the problems people usually experience in interpersonal relations. Barkham et al. (19) confirmed IIP-32 reliability -using Cronbach's alpha- and validity -using exploratory and confirmatory factor analysis.

The Persian version of IIP-32 was prepared and investigated by Fath et al. (20). Exploratory factor

analysis of Persian version revealed six factors as follows: assertiveness, sociableness, openness, caring, aggression, supportiveness, involvement, and dependence. The Persian version of Inventory of Interpersonal Problems has 29 items. The three items of 6, 19 and 31 were removed from the scale because of low factor loading or cross-loading. Convergent validity was confirmed via calculating correlation of IIP with alexithymia questionnaire. In this study, Cronbach's alpha was 0.82 for the whole questionnaire, 0.83 for assertiveness and sociableness, 0.63 for openness, 0.60 for caring, 0.83 for aggression, 0.71 for supportiveness and Involvement and 0.63 for dependence. Split-half coefficients were 0.83 for whole questionnaire and 0.80, 0.70, 0.61, 0.88, 0.77 and 0.61, for the six factors respectively.

- *Beck Depression Inventory- Second Edition (BDI-II)*: This questionnaire was presented by Beck, Steer, & Brown in 1996. BDI-II has 21 multiple-choice items. This self-report inventory is accepted as one of the best measures of depression (21). BDI-II showed good internal consistency among students and outpatients (Cronbach's alpha 0.91 to 0.93 among students and 0.92 among outpatients). This inventory showed high test-retest reliability (0.93). Convergent and discriminant validities of the BDI-II have been confirmed in several studies (21). The psychometric properties of the Persian version of the BDI-II were studied by Ghasemzadeh et al. (22). In this study, Cronbach's alpha coefficient was 0.87 and test-retest reliability was 0.74. In BDI-II, each item is rated based on the severity, on a four degree scale from 0 to 3; accordingly the total scores range from 0 to 63 (21).

- *Social Phobia Inventory (SPIN)*: SPIN is a 17-item inventory that measures the intensity of social phobia. SPIN has three subscales: fear, avoidance and physiological arousal. In SPIN, each item is rated on a five degree scale ranging from 1 (almost never) to 5 (almost always) (23). This inventory has good reliability and validity. Cronbach's alphas range from 0.82 to 0.95 for the total scale, 0.68 to 0.91 for fear subscale, 0.79 to 0.91 for avoidance subscale and 0.57 to 0.80 for arousal subscale. The test-retest reliability of the inventory ranges from 0.78 to 0.89. In addition, SPIN showed good convergent and discriminant validity (23,24). The Persian version of SPIN has good psychometric properties. Cronbach's alpha for the total scale ranges from 0.74 to 0.89. The test-retest reliability with a two week interval has been reported 0.68 and convergent validity ranges from 0.64 to 0.78 (25). In this inventory the items are rated on a five degree

scale ranges from 1 (not at all) to 5 (extremely); accordingly the total scores range from 1 to 85.

After preparation of the Persian version of SSPS, this scale along with IIP, BDI-II and SPIN were administered. To check the validity of the scale, the construct validity (using exploratory factor analysis and confirmatory factor analysis) and divergent validity were examined. Since social security is defined as a positive emotional state which occurs in the social context (1, 5-6), its association with the scores of Inventory of Interpersonal Problems (IIP) was considered to assess divergent validity. On the other hand, considering the underlying assumption of SSPS (i.e., lack of social safeness which acts as a vulnerability towards a range of disorders including depression and anxiety) (3, 5), SSPS divergent validity was investigated via calculating its correlation between BDI- II and SPIN scores with SSPS scores. To investigating the divergent validity, data from the total sample (n = 521) was used. Also in this study, reliability was examined, using Cronbach’s alpha coefficient and test-retest method. For Cronbach’s alpha, data from the total sample (n

= 521) were used. For test-retest reliability, data from 35 subjects collected in to occasions with four weeks interval were used. Analysis was performed using SPSS and AMOS (version 22).

In this study, with respect to code of ethics for psychologists and counselors (Psychology and Counseling Organization of Iran) the following issues were considered: 1. Participating in the research was voluntary for all the subjects. 2. Participants get information about the research and activity that they have to do and informed consent was obtained. 3. The questionnaire was completed anonymously. Other information of participants was kept secret and the report of the research is offered in a way that participant cannot be identified. The research project was approved by the ethics committee of research and technology division in Shahed University.

**Results**

Demographic characteristics of the study samples are shown in Table 1.

**Table 1.** Demographic characteristics of study’s samples

Sample	Gender		Education			Age	Distribution of
	F (%)	Male	B.A	MD	MA-PhD	M (SD)	Scores
n=300	238 (79.3)	62 (20.7)	265 (88.1)	13 (4.3)	23 (7.6)	19.90 (4.58)	38.63 (8.17)
n= 221	182 (82.4)	39 (17.6)	187 (84.7)	15 (6.8)	19 (8.6)	20.65 (4.66)	39.05 (8.29)
Total (n=521)	420 (80.6)	101 (19.4)	451 (86.6)	28 (5.4)	42 (8.1)	20.22 (4.62)	38.80 (8.21)

There were no significant differences between 300 and 221 cases in terms of age (t= -1.78, P=0.07), gender ( $\chi^2=0.74$ , P=0.39), education ( $\chi^2=1.73$ , P=0.42) and the mean of SSPS scores (t= -0.56, P=0.57).

In order to assess construct validity of SSPS, we performed an exploratory factor analysis. Before performing this analysis, we checked the suitability of the data for factor analysis, using corrected item total correlation index (26) and the standard skewness index (27) in the sample of 300. The results are shown in Table 2.

**Table 2.** Corrected item total correlation and standard skewness for each item

Item	Corrected item total correlation	standard skewness
1	0.70	-0.51
2	0.73	-0.30
3	0.71	-0.17
4	0.40	-0.37
5	0.60	-0.52
6	0.67	-0.40

7	0.61	-0.42
8	0.67	-0.44
9	0.64	0.14
10	0.76	-0.41
11	0.71	-0.45

As can be seen in Table 2, all items showed acceptable Corrected item total correlations (>0.20) (26). The amounts of standard skewness also show that all items of the scale are in optimal range (between -1.96 and +1.96) (27).

For the exploratory factor analysis of the scale, Varimax rotation was used. Since the results of Varimax rotation, can be better and easier

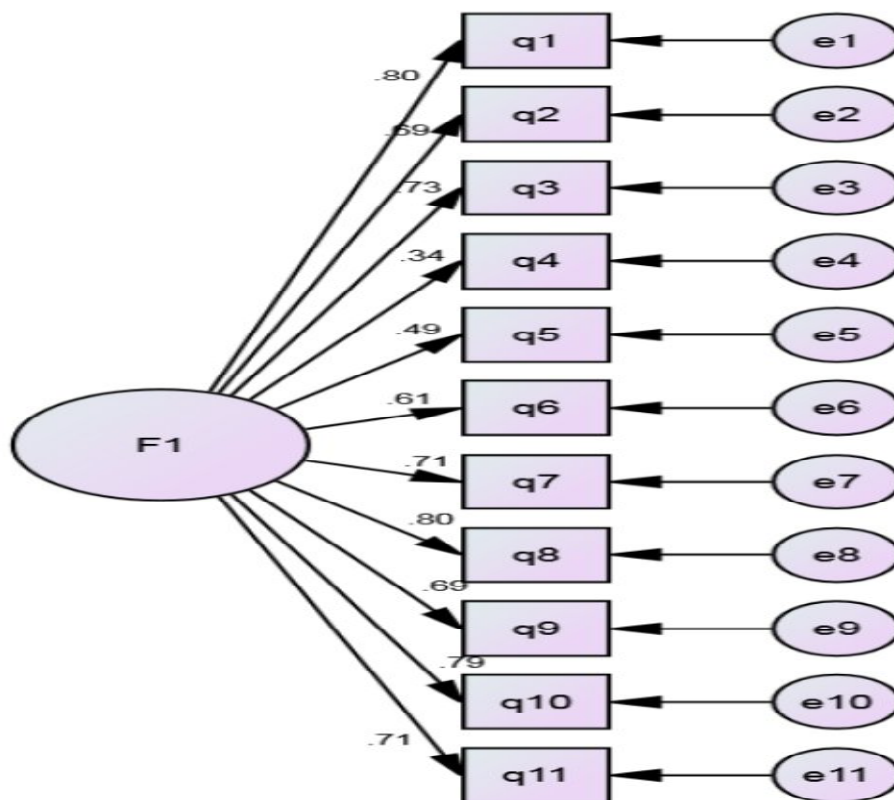
interpreted (28), most of the studies used this rotation method unless the theoretical foundations or data show that the factors are strongly correlated. In this case, Oblimin rotation is more appropriate (26,28). Since there are no correlated dimensions posed for social safeness and SSPS is introduced as a unidimensional scale, Varimax rotation is recognized as appropriate in this study. Statistical indicators were suitable for factor analysis ( $KMO=0.92$ ,  $\chi^2$  Bartlett=1787.98,  $P<0.001$ ,  $df =55$ ). The results of exploratory factor analysis revealed a single-factor solution. Table 3 shows the factor loadings and eigenvalues associated with the factor.

11. I find it easy to feel calmed by people close to me	0.78	0.60
1. I feel content within my relationships	0.77	0.60
6. I feel secure and wanted	0.73	0.54
8. I feel accepted by people	0.73	0.53
9. I feel understood by people	0.72	0.52
7. I feel a sense of belonging	0.68	0.46
5. I have a sense of being cared about in the world	0.66	0.43
4. I feel part of something greater than myself	0.46	0.21
eigenvalue	5.81	-
Total variance explained	52.79	-

**Table 3.** Principal component analysis of Persian version of SPSS using Varimax rotation

	Factor 1	Communalities
10. I feel a sense of warmth in my relationships with people	0.82	0.67
2. I feel easily soothed by those around me	0.79	0.63
3. I feel connected to others	0.78	0.62

As table 3 shows, the 11 factor loadings are higher than 0.30 (28). Like the original scale, the Persian version of SSPS also has a single-factor structure. To check the validity of the structure resulted from the exploratory factor analysis, confirmatory factor analysis was performed using data of the second sample ( $n=221$ ). The results of this analysis indicate that single-factor model obtained in the exploratory factor analysis fit the data well (Figure 1).



**Diagram 1.** Single factor model of SSPS and the standardized path coefficients

$$\chi^2 = 87.38 ; df = 30 ; \chi^2 / df = 1.30 ; CFI = 0.99 ; GFI = 0.97 ;$$

$$AGFI = 0.93 ; RMSEA (90\% CI) = 0.037 (0-0.066)$$

To evaluate the fitness of the model, relative  $\chi^2$  ( $\chi^2$  to df ratio), Root Mean Square Error of Approximation (RMSEA), Comparative Fit Index (CFI), Goodness of Fit Index (GFI) and Adjusted Goodness of Fit Index (AGFI) were used.

A traditional and common index in evaluating models is  $\chi^2$  (29); When  $\chi^2$  is nonsignificant at an alpha level of 0.05, the model has good fitness. However, this index faces significant limitations. Among the most significant of these limitations is that  $\chi^2$  is too sensitive to the sample size. Since  $\chi^2$  essentially is a statistical significance test, its utility in large samples, almost always leads to rejection of the model. On the other hand, this index loses its power in small sample sizes. Relative  $\chi^2$  ( $\chi^2/df$ ) was introduced to solve this problem and to reduce the effect of sample size (30). Although the relative  $\chi^2$  has not a fixed acceptable amount, Wheaton and colleagues (30) introduced values of less than 5 and Tabachnik and Fidell (28) introduced values of less than 2 as acceptable amounts in this index. In this paper the obtained relative  $\chi^2$  (<2) is optimal and shows good fitness. Another indicator is RMSEA, which in recent years has been introduced as the most useful goodness of fit index (31). Hu and Bentler (32) introduced RMSEA less than 0.06 as indicator of acceptable models. Accordingly SSPS model is in the optimal range (0.037) in this index too. Next index is CFI. The values of this index range from zero to 1. Values closer to 1 indicate better fitness. Hu and Bentler (32) introduced  $CFI \geq 0.95$  as indicator of optimum model. Like CFI, GFI and AGFI indices vary between zero and 1, and values closer to 1 indicate better fitness. In these indices, values of 0.90 and higher indicate fitness of the model (33-34). So based on these three indices the model shows good fitness ( $CFI = 0.99$ ;  $GFI = 0.97$ ;  $AGFI = 0.93$ ).

In order to check the divergent validity of the scale, we calculated its correlation with IIP, BDI-II and SPIN. These results are reflected in Table 4. It shows that SSPS has significant negative correlation with all three questionnaires.

**Table 4.** Correlation matrix of SSPS, IIP, BDI-II and SPIN

	SSPS	IIP	BDI-II
SSPS	1		
IIP	-0.58**	1	
BDI-II	-0.51**	0.48**	1
SPIN	-0.50**	0.65**	0.40**

\*\*  $P \leq 0.01$

Investigating the internal consistency, using data obtained from all subjects ( $n=521$ ) showed Cronbach's alpha coefficient of 0.91. In Addition, test-retest reliability using data of 35 subjects that responded to the scale two times with a 4 week interval was 0.82.

## Discussion

Social safeness means perceiving the environment as secure, warmth and soothing (1,5-6). Gilbert believed that difficulty in achieving social safeness is a transdiagnostic vulnerability factor for some of psychological problems such as depression and anxiety disorders (1,6). Social Safeness and Pleasure Scale-SSPS (6) was developed for measuring social safeness and used widely for studying this construct. Various studies have reported good psychometric properties for this scale. Since the Persian version of this scale has not been investigated amongst Iranian Population yet, the present study was performed to prepare and investigate the reliability and validity of the Persian version of the SSPS in a sample of Iranian students.

Results showed that all items of the scale have high correlations with corrected total score (mean of correlations=0.65). Standard skewness index showed that in all items, the responses have normal distribution. The results of the exploratory factor analysis showed that the Persian version of the scale has a single factor structure as the original factor (6). Confirmatory factor analysis also showed that a single-factor model fits the data well. These findings are also consistent with the findings of Pinto Gouveia et al. (as cited in 14) and Akin et al. (15) for Portuguese and Turkish versions respectively.

Checking the reliability, Cronbach's alpha was 0.91, indicating good internal consistency. This finding is consistent with the findings of Gilbert et al. (6), Kelly and Carter (9), Kelly and Dupasquier (4) that have reported the Cronbach's alpha of 0.91, 0.94 and 0.96 respectively. In addition, this finding is consistent with the findings of Pinto Gouveia et al. (as cited in 14) and Akin et al. (15) that have reported Cronbach's alpha of 0.91 and 0.82 for Portuguese and Turkish versions respectively. Test-retest reliability for a 4 week interval was good too ( $r=0.82$ ).

Checking the divergent validity via calculating correlations of SSPS scores with the scores of inventory of interpersonal problems (IIP), Beck Depression Inventory (BDI-II) and social phobia Inventory (SPIN) showed that SSPS has significant negative correlations with all three measures. These are consistent with the findings of Gilbert et al. (3, 6), Kelly et al. (5) and Matos, Pinto Gouveia, and Duarte (14) that has reported significant negative correlation between social safeness and depression and anxiety indices.

In sum, SSPS has good psychometric properties. Therefore this study can be important and valuable because of providing a measure for evaluating a construct that is supposed to play a transdiagnostic role in mental disorders. This has especial importance for those clinicians and therapists who are working in new approaches that suppose an important and central role for social safeness and hence need to reliable and valid instrument for measuring this construct. Today, compassion focused therapy introduced by Gilbert (35) and more

recently Radically Open Dialectical Behavior Therapy introduced by Lynch et al. (36,37) are two approaches that suppose fundamental role for social safeness in psychopathology and target it in the treatment.

At the end, there are two important points. First, the participants of this study are students; hence generalizing the results of this study to other populations should be done with caution. One suggestion for future research is to investigate the scale in other populations (general non-student population and clinical population) to extend the generalizability of the findings. On the other hand, females constituted the most proportion of the sample in this study. Removing this limitation in future researches so that there would be gender balance in research samples also can improve the generalizability of the findings.

### Conclusion

The Persian version of Social Safeness and Pleasure Scale has good internal consistency, test-retest reliability, construct validity, and divergent validity; and hence can be used in researches and clinical evaluations.

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