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The Persian version of the Calgary Depression Scale for Schizophrenia (CDSS-P)

Reza Rostami[a,*], Reza Kazemi[b], Mohammad-Reza Khodaie-Ardakani[c], Laleh Sohrabi[d], Somaie Ghiasi[e], Zeynab Sadat Kamali[a,d], Atefeh Zaryabi[f], Zahra Ghiasi[g], Zahra Nasiri[d], Mehdi Rezaei[h], Donald E. Addington[i]

[a] Department of psychology, University of Tehran, Tehran, Iran
[b] Cognitive lab, Department of Psychology, University of Tehran, Tehran, Iran
[c] Razi Hospital, University of Social Welfare and Rehabilitation Sciences, Tehran, Iran
[d] Atieh Clinical Neuroscience Center, Tehran, Iran
[e] Department of Psychology, Kharazmi University, Tehran, Iran
[f] Department of Clinical Psychology, Allame Tabatabaei University, Tehran, Iran
[g] Department of Psychiatry, Zahedan University of Medical Sciences, Zahedan, Iran
[h] Behavioral Sciences Research Center, Life Style Institute, Baqiyatallah University of Medical Sciences, Tehran, Iran
[i] Department of psychiatry, University of Calgary, Calgary, Alberta, Canada

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ABSTRACT

Determining depression symptoms in schizophrenic patients is a challenging process because of a degree of similarity between depression symptoms and negative symptoms and the extrapyramidal side effects of neuroleptic drugs, but it is crucial to evaluate and measure depression among patients with schizophrenia for a better clinical outcome. The *Calgary Depression Scale for Schizophrenia (CDSS)* is a valid and reliable instrument used for the evaluation of depression in schizophrenia. This study aimed to determine the psychometric properties of the Persian version of CDSS in a sample of people with schizophrenia. Clinical interviews were conducted with 95 schizophrenic patients (40 inpatients and 55 outpatients), who were assessed with *the Positive and Negative Syndrome Scale (PANSS)*, *Hamilton Depression Rating Scale (HDRS-17* and *HDRS-24* items*)*, and *the Calgary Depression Rating Scale (CDSS)*. Then an exploratory factor analysis was conducted to determine correlations between scales, Cronbach's alpha, and cutoff scores. The factor analysis led to the extraction of a unifactorial solution. The CDSS had significant relationships with PANSS Negative and PANSS General. However, it had no significant relationship with PANSS Positive and the PANSS Total. The CDSS also had significant relationships with HDRS-17 and HDRS-24. In addition, Cronbach's alpha of total score, test-retest reliability, and cutoff score were estimated at 0.86, 0.82, and 8 (sensitivity = 0.79 and specificity = 0.84), respectively. The findings support the CDSS unifactorial approach. Results also showed that the CDSS Persian version had acceptable psychometric properties; thus, it could be employed to evaluate depression among schizophrenic patients.

1. Introduction

Nearly sixty-one percent of schizophrenic patients, men more than women, suffer from other comorbid disorders, including anxiety disorders, mood disorders, and substance abuse disorders (Das et al., 2018). Depression is one of the most common comorbid disorders with schizophrenia. The comorbidity of depression with schizophrenia has been estimated to be between 50% (Buckley et al., 2008) and 61% (Gozdzik-Zelazny et al., 2011). Depression can occur in every phase of schizophrenia (Zisook et al., 2006). In 30% of cases, depression may occur a few months after acute psychosis (Heald et al., 2008), a condition which is called post-schizophrenic depression according to the 10th version of International Statistical Classification of Diseases and Related Health Problems (ICD-10) (Bressan et al., 2003).

There are two main hypotheses regarding the occurrence of depression in schizophrenic patients, one considering the side effect of antipsychotics as a main cause and the other considering depression symptoms as a natural course in the development of schizophrenia as

* Corresponding author at: Department of psychology, University of Tehran, Jalel-e-Al-Ahmad highway, Kardan St, Tehran, 1969713663, Iran.
E-mail address: rrostami@ut.ac.ir (R. Rostami).

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concluded in (Tapp et al., 2001). Depression in schizophrenia is associated with poor treatment outcomes, cognitive traumas, prolonged hospitalization, suicide, frequent relapse, non-adherence to medicines, low quality of life, and dysfunctions in everyday tasks (Bressan et al., 2003; Sands and Harrow, 1999; Upthegrove et al., 2017).

Unlike the ICD-10, Diagnostic Statistical Manual of Mental Disorders, 5th Edition, (DSM-5) does not regard depression as a symptom in schizophrenia and only relies on negative symptoms (Bressan et al., 2003). But, there is conflicting evidence showing the possible overlap of depression and negative symptoms (Lako et al., 2012; Siris et al., 1988). For instance, Krynicki et al. showed that depression had average relationships with negative symptoms but slight degrees of overlap with positive symptoms (Krynicki et al., 2018). Regardless of the fact that depression is a major or comorbid symptom of schizophrenia, there is a clear overlap between these two disorders. Hence, a reliable and valid instrument is required to accurately evaluate depression in schizophrenic patients.

The Calgary Depression Scale for Schizophrenia (CDSS) has been designed to solve the aforesaid problem (Addington et al., 1990). The CDSS evaluates depression symptoms regardless of negative symptoms or extrapyramidal symptoms. The CDSS has been investigated many times and its validity and reliability have been confirmed. It also holds a higher level of sensitivity to the diagnosis of depression among schizophrenic patients than other depression scales such as the HAM-D (Addington et al., 1996, 1993a, b,1994; Addington et al., 1992). The convergent validity, discriminant validity, interrater reliability, internal consistency, sensitivity, and specificity of the CDSS have been checked and confirmed in various clinical populations in different languages (Addington et al., 1996; Kim et al., 2006; Müller et al., 1999; Quirk et al., 1998; Rekhi et al., 2018). According to a Greek version of the CDSS, the internal consistency and interrater reliability were reported to be 0.87 and 0.78, respectively (Kontaxakis et al., 2000). The correlation coefficient of CDSS was significantly related to negative and general symptoms (0.12 and 0.23, respectively); however, it had no significant relationships with positive symptoms (-0.04). In a similar study conducted on 267 schizophrenic patients in India, Grover et al. (Grover et al., 2017) showed that the CDSS had no significant relationships with positive and negative symptoms but had a significant relationship with the HDRS (0.61). However, the HDRS had significant relationships with positive, negative, and general symptoms. They concluded that the CDSS was less affected by negative symptoms compared to HDRS.

This study aimed to standardize the (internal and external) construct validity, internal consistency, and factorability (sensitivity and specificity) of the Persian version of CDSS.

2. Materials and methods

2.1. Participants

The sample included 95 schizophrenic patients, admitted into Razi and Niyayesh Psychiatric Hospitals in Tehran, Iran. These inpatients and outpatients were admitted from January 2014 to July 2015. They matched the diagnostic symptoms of schizophrenia according to the DSM-5 confirmed by clinical psychiatric interviews. Patients with history of drug abuse, intellectual disability, and any neurological disorder diagnosis were excluded from the sample.

2.2. Methodology

The CDSS was translated by three psychologists, who were competent in both English and Persian. The final version was discussed in a task force consisting of experienced experts in the field. Then it was translated back into English by two professional translators. The back-translation version of CDSS was sent to Professor Addington, the author of the original CDSS, to see if the English concepts were properly and accurately translated into Persian.

The qualified patients were evaluated by psychiatrists, who then filled out the demographic and clinical questionnaires. The diagnosis of schizophrenia was established by the psychiatrist through DSM-5 criteria and clinical interviews. Then *the Positive and Negative Syndrome Scale (PANSS)* was employed to evaluate positive, negative, and psychopathological symptoms of patients. For depression, the HDRS-17 and HDRS-24 were used.

2.3. Statistical analysis

The research data were analyzed in SPSS 16, in which the significance level was considered 0.05. The principle component analysis (PCA) was employed to extract factors. There are different approaches in exploratory factor analysis to determine the number of factors. In this study, the scree plot and eigenvalue were utilized to determine the number of constructive factors. An eigenvalue is the summation of squares of factor loads placed on each factor. The explanatory variance of each factor was shown by the eigenvalue.

When the exploratory factor analysis was conducted, the Kaiser-Meyer-Olkin (KMO) test was carried out to determine the degree of mutual correlations between items. Then the Bartlett test of sphericity was conducted to see whether the resultant correlation matrix had a significant difference from zero, so that it was justifiable to carry out the factor analysis, or the questionnaire items were correlated strongly enough to be integrated into a cluster. After determining the correlation matrix of variables, the factors were extracted. In this step, highly correlated variables were categorized as a class or factor.

The internal consistency approach was employed to determine reliability. For this purpose, Cronbach's alpha was determined for the whole questionnaire and each factor. Then the maximum likelihood estimation (MLE) test was carried out to determine the equality of variances. The item score correlation coefficient and corrected item-total correlation were also reported.

The Spearman's rank-order correlation coefficients of CDSS, PANSS Total, PANSS General, PANSS Negative, PANSS Positive, HDRS-17 and HDRS-24 scores were determined to check the construct validity. Then the Spearman's rank-order correlation coefficients of the questionnaire items and total scores were employed to evaluate criterion validity.

The sensitivity and specificity of total scores (0–27) were obtained to determine the best cutoff score of the questionnaire. The best cutoff score of the test shows the maximum summation of sensitivity and specificity. For this purpose, the ROC figure was drawn. The area under the curve indicates factorability, i.e. the ability to distinguish between schizophrenic patients with or without depression. The values of sensitivity and specificity, positive and negative predictions, and positive and negative probability ratios were based on the fact that the prevalence of depression was 21% among schizophrenic patients.

3. Results

This study was conducted on 95 schizophrenic patients (40 inpatients and 55 outpatients), 90% of whom were males, and the rest were females. The mean age of patients was 41.84 ± 11.49. Table 1 provides the demographic information and test results. It also shows the total scores of different scales as mean and standard deviation. The total scores of PANSS, CDSS-P, HDRS-17, and HDRS-24 were 84.52 ± 46.16, 6.00 ± 5.38, 12.65 ± 6.26, and 17.8 ± 14.25, respectively.

3.1. Validity

3.1.1. Internal construct validity

Explanatory factor analysis was carried out to determine the construct validity of CDSS. At first, items and their choices were analyzed. Then the correlation of items was checked, and a reasonable

Table 1
Demographic data and average scores of the administered questionnaires in depressed and non-depressed patients.

Demographic characteristics	Total (n = 95)	Without depression (n = 75)	With depression (n = 20)	P-value
Age (Mean (SD)	41.84(11.49)	42.37(11.54)	39.85(11.36)	NS
SEX(M/F)	85/10	68/7	17/3	NS
Marital Status(S/M/D)	57/23/15	42/19/14	15/4/1	NS
Education (Elementary/Middle & High school educated/Graduated)	18/39/38	14/30/31	4/9/7	NS
ClinicalCharacteristics	**Mean (SD)**			
PANSS Positive	20.83(18.58)	21.71(20.49)	17.55(7.68)	NS
PANSS Negative	21.86(24.85)	21.69(27.74)	22.5(7.66)	0.014
PANSS Genral	41.82(28.61)	41.04(30.19)	44.75(22.09)	0.004
PANSS Total	84.52(46.16)	84.44(49.84)	84.8(29.48)	NS
HDRS 17 Items	12.65(6.26)	10.49(3.99)	23.57(3.74)	< 0.001
HDRS 24 Items	17.14(8.25)	14.53(5.49)	31.5(5.68)	< 0.001
CDSSTotal	6.00(5.38)	4.45(4.34)	11.95(4.92)	< 0.001

Table 2
Internal reliability of the items of the Calgary Depression Scale for Schizophrenia (CDSS-P).

N = 95	Mean	SD	Extraction	Factor	Eigenvalue	% of Variance	Mean if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha with Item Deleted
C1. Depressed Mood	1.22	1.09	0.85	0.82	4.4	48.8	4.78	0.76	0.83
C2. Hopelessness	0.98	1.06	0.72	0.75	1.1	11.9	5.01	0.66	0.84
C3. Self-Depreciation	0.77	1.04	0.68	0.82	1.0	11.2	5.23	0.74	0.83
C4. Guilt, ideas of reference	0.36	0.67	0.84	0.7	0.7	8.3	5.64	0.58	0.85
C5. Pathological Guilt	0.36	0.68	0.87	0.74	0.5	6.1	5.64	0.62	0.85
C6. Morning Depression	0.75	0.92	0.61	0.71	0.5	5.2	5.24	0.61	0.85
C7. Early Wakening	0.49	0.72	0.66	0.37	0.4	4.1	5.51	0.3	0.87
C8. Suicide	0.36	0.7	0.66	0.53	0.2	2.4	5.64	0.45	0.86
C9. Observed Depression	0.68	0.72	0.6	0.73	0.2	2.0	5.3	0.63	0.85

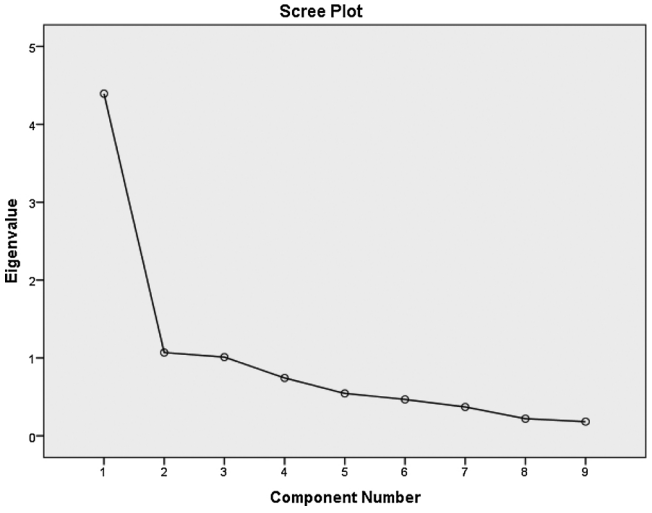

Fig. 1. Scree plot for each component of the CDSS-P.

relationship was observed. Statistical hypotheses were checked to conduct the explanatory factor analysis. The KMO measure, Bartlett measure, and degree of freedom were 0.81, 376.9, and 36, respectively. The significance level was below 0.001. According to KMO and Bartlett measures, homogeneity of variance was achieved; thus, there was no obstacle to the implementation of a factor analysis. Hence, explanatory factor analysis was conducted on CDSS items and a general factor was obtained. Since the loads of all factors were above 0.35, no item was deleted from the questionnaire. Table 2 reports the factor loads of items on the first factor. Fig. 1 shows the scree plot of factors. Table 3 indicates the Spearman's rank-order correlation of CDSS items. The first item has the highest correlation with the other items.

3.1.2. The external construct validity

Table 4 shows the correlation of CDSS-P scores with PANSS, HDRS-17, and HDRS-24. In fact, CDSS-P had significant correlations with HDRS-17 (r = 0.603), HDRS-24 (r = 0.669), PANSS Negative (r = 0.284), and PANSS General (r = 0.291). However, it had no significant correlations with PANSS Positive (r = 0.284) and the total score of PANSS (r = 0.097).

Table 3
Spearman's correlation values between each of the CDSS-P items.

	C1	C2	C3	C4	C5	C6	C7	C8	C9	CDSS Total
C1. Depressed Mood	1.000									
C2. Hopelessness	.717**	1.000								
C3. Self-Depreciation	.612**	.649**	1.000							
C4. Guilt, ideas of reference	.413**	.398**	.546**	1.000						
C5. Pathological Guilt	.417**	.387**	.553**	.710**	1.000					
C6. Morning Depression	.646**	.436**	.579**	.410**	.398**	1.000				
C7. Early Wakening	.241*	.165	.161	.221*	.212*	.162	1.000			
C8. Suicide	384**	.409**	.420**	.314**	.411**	.252*	.239*	1.000		
C9. Observed Depression	.622**	.490**	.542**	.441**	.467**	.500**	.176	.234*	1.000	
CDSS Total	.865**	.767**	.791**	.619**	.650**	.740**	.393**	.541**	.727**	1.000

** p-value < 0.001.

Table 4
Corellations between CDSS-P and HDRS(17 and 24 items), PANSS (Positive, Negative, General, and Total).

	Mean	SD	1	2	3	4	5	6	7
CDSS total	6.00	5.38	1						
HDRS 17 items	12.65	6.26	.603**	1					
HDRS 24 items	17.14	8.25	.669**	.926**	1				
PANSS Positive	20.83	18.58	−0.191	0.003	−.062	1			
PANSS Negative	21.86	24.85	.284**	.410**	.289*	.121	1		
PANSS General	41.82	28.61	.291**	.389**	.382**	.316**	.632**	1	
PANSS Total	84.52	46.16	.097	.276*	.258*	.586**	.663**	.850**	1

** p-value < 0.001.

3.2. Reliability

3.2.1. Internal consistency

Cronbach's alpha for all the items of CDSS-P was 0.86 which means that it has an acceptable level of internal consistency. The coefficient of determination for item 1 was the highest among all. Cronbach's alpha has been reported for each item in Table 2.

3.3. Sensitivity and specificity

The most appropriate cutoff point to differentiate between the depressed and non-depressed patients was 8 with a sensitivity and specificity of 79 and 84 percent, respectively. Moreover, Positive and negative predictive values were 57 and 94 percent, respectively, and likelihood ratio for a positive test was 4.8 and for negative test was 0.25 (Table 5). The area under the receiver operating characteristics curve had a value of 0.857 (95% CI 0.750-0.964) (Fig. 2).

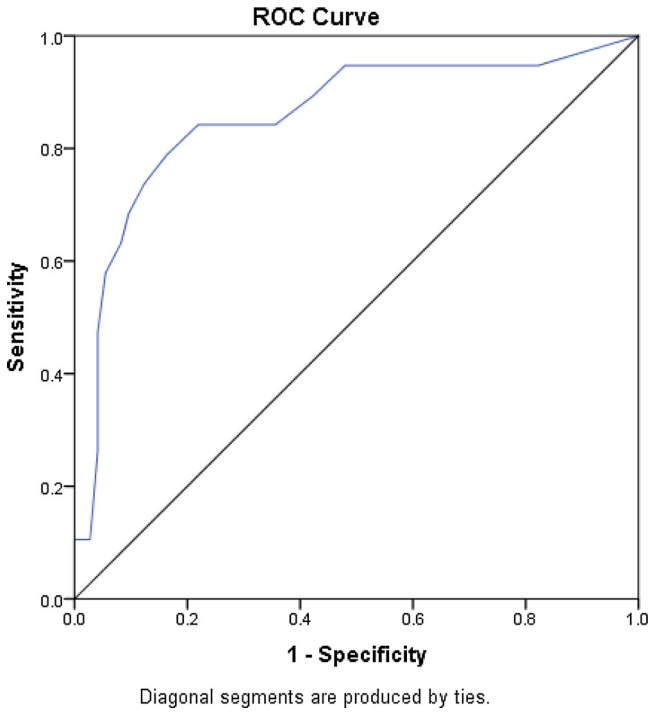

Fig. 2. The ROC curve.

4. Discussion

This study was conducted to determine the validity and reliability of the CDSS Persian version (CDSS-P) by calculating its construct validity, internal consistency (Cronbach's alpha), convergence validity, and factorability. In this study, principal component factor analysis led to a unifactorial solution. Previous studies conducted factor analysis of CDSS and produced different results. For instance, Addington et al. (Addington et al., 1996), Maggini and Raballo (Maggini and Raballo, 2006), and Schennach et al. (Schennach et al., 2012) extracted three factors. Grover et al. (Grover et al., 2017) and Rekhi et al. (Rekhi et al., 2018) extracted a bifactorial scale. Martin-Reyes et al. (Martín-Reyes et al., 2011) extracted two factors, the second of which had only two items (7 and 8). However, factors had only one (Maggini and Raballo, 2006) or two (Grover et al., 2017; Martín-Reyes et al., 2011) items in some studies. There were inconsistent results on the number of factors, something which might be due to the fact that heterogeneous samples were used in different studies. For instance, Martin-Reyes et al. classified schizophrenic patients into complex and simple groups (Martín-Reyes et al., 2011). Müller et al. selected normal individuals (Müller et al., 1999). Grover et al. divided the patients into remitted and non-remitted groups (Grover et al., 2017). Rekhi et al. selected the patients with a risk of psychosis (Rekhi et al., 2018). Altogether, the explanatory factor analysis results of this study are consistent with the findings of Addington et al. (Addington et al., 1993a), Müller et al. (Müller et al., 1999), Kontaxakis et al. (Kontaxakis et al., 2000), and Bernard et al. (Bernard et al., 1998), who conducted their studies in Germany, Greece, and France, respectively. Like the present study, they extracted only one factor.

In this study, Item 7 has the lowest factor load (0.37), a finding which is consistent with those of Addington et al. and Schennach et al. (Addington et al., 1996; Schennach et al., 2012). Moreover, Item 7 and 6 formed a separate factor. They are known as the major depressive symptom, compared with melancholia in schizophrenia.

The internal consistency of CDSS-P items was sufficient in the domain (0.83-0.87), and the total Cronbach's alpha was estimated at 0.86.

Table 5
Diagnostic accuracy associated with different cutoff points.

		Cutoff Points of CDSS Total Score										
Diagnostic accuracy		2	3	4	5	6	7	8	9	10	11	12
Sensitivity		0.95	0.95	0.89	0.84	0.84	0.84	0.79	0.74	0.68	0.63	0.58
Specificity		0.45	0.52	0.58	0.64	0.73	0.78	0.84	0.88	0.9	0.92	0.95
Likelihood ratio	**Negative**	0.97	0.98	0.95	0.94	0.94	0.95	0.94	0.93	0.91	0.90	0.89
	Positive	1.73	1.98	2.11	2.36	3.07	3.84	4.80	5.98	7.14	7.68	10.57
	Negative	0.12	0.10	0.18	0.25	0.22	0.20	0.25	0.30	0.35	0.40	0.45

These findings are consistent with validity and cross-cultural studies. The Cronbach's alphas of the original, German, Spanish, French, Greek, Brazilian, and Japanese versions were reported 0.82 (Addington et al., 1996), 0.76 (Müller et al., 1999), 0.83(Sarró et al., 2004), 0.79 (Bernard et al., 1998), 0.87 (Kontaxakis et al., 2000), 0.80 (Bressan et al., 1998), and 0.82 (Kaneda et al., 2000), respectively. Given the fact that a Cronbach's alpha of 0.70 was assumed to show a good internal consistency (Cronbach and Meehl, 1955), the internal consistency of the Persian version was acceptable. The test-retest reliability (0.82) was consistent with the finding (0.89) of Sarro et al. showing an acceptable test-retest reliability (Sarró et al., 2004).

In this study, all of the items were consistent, except for Item 7 which had no significant relationships with Items 2, 3, and 6; however, it had a significant relationship with the total score of CDSS. This result is consistent with the findings of Sarro et al. In the Spanish version, item 7 and 4 had no significant relationships with other items and the total score (Sarró et al., 2004). In the French version, items 7 and 8 had lower correlations with the total score of CDSS compared to other items (0.28 and 0.48, respectively)(Bernard et al., 1998). The omission of item 7 may result in a higher internal consistency; however, it was not omitted because it had a significant relationship with the total score of CDSS. Lancon et al. believe that item 7 and 4 are affected by the selected sample, especially if the sample includes outpatients and inpatients (Lançon et al., 1999) because, as they state, these items are more typical of stable outpatients with both depression and schizophrenia. In the present study, 40 of the participants were inpatients. Altogether, more studies are required with larger and more homogeneous samples to determine whether the omission of Item 7 maintains the unifactorial structure of CDSS.

With regard to the convergent validity, the research results were significantly related to depression assessment instruments similar to other studies. The significant relationships of CDSS with HDRS-17 (0.60) and HDRS-24 (0.67) were consistent with the findings of Grover et al., Addington et al., and Kontaxakis et al. (Addington et al., 1996; Grover et al., 2017; Kontaxakis et al., 2000). Moreover, Sarro et al. reported the convergent validities of CDSS with HDRS-17 and HDRS-21 at 0.70 and 0.69, respectively (Sarró et al., 2004). Their findings were close to those of this study. In the French scale, the convergent validities of CDSS (with HDRS, Montgomery-Asberg Depression Rating Scale, and Psychomotor Retardation Scale) were reported to range between 0.29 and 0.83(Bernard et al., 1998); however, the CDSS-HDRS correlation resembled the finding of the present study (0.70). In two other studies, Lancon et al. and Lancon et al. reported the CDSS-HDRS convergent validity at 0.70, which is comparable with the finding of this study (Lancon et al., 2000; Lançon et al., 1999). If the correlation coefficient is below 0.30, it shows a poor convergent validity and if it ranges between 0.30 to 0.50, it indicates an average validity. Finally, if it is greater than 0.50, it shows a high validity. Therefore, the convergent validity of CDSS was acceptable.

In consistency with the other validated versions of CDSS, CDSS-P had weak relationships with PANSS Negative and PANSS General and it had no significant relationships with the positive components and total score of CDSS, something which is comparable to previous findings. For instance, Sarro et al. found no significant relationships between CDSS and positive components of PANSS (Sarró et al., 2004). However, they reported significant relationships with negative components (0.23) and PANSS General (0.43). In consistency with the present study, Martin-Reyes et al., Lancon et al., and Lancon et al. showed that CDSS had a significant relationship with PANSS General (Lancon et al., 2000; Lançon et al., 1999; Martín-Reyes et al., 2011). In addition, Addington indicated that Calgary had significant relationships with PANSS Positive and PANSS Negative (Addington et al., 1992). However, there were no significant relationships between Calgary and PANASS Positive-Negative in another study conducted by Addington (Addington et al., 1996). At the same time, Schennach et al. and Bressan et al. showed that CDSS had significant relationships with all PANSS components (Bressan et al., 1998; Schennach et al., 2012). However, Bressan et al. indicated that all of the correlation coefficients were below 0.50 (Bressan et al., 1998); nevertheless, CDSS had no significant relationships with any of PANSS components in the studies conducted by Kim et al. and Kontaxakis et al. (Kim et al., 2006; Kontaxakis et al., 2000). These inconsistent findings might be caused by heterogeneous samples. Generally, the CDSS-HDRS relationship (0.60 and 0.67) was stronger than the relationship between CDSS and PANSS Negative (0.28). Moreover, HDRS had significant relationships with PANSS Negative, PANSS General, and total score of PANSS. Therefore, CDSS may evaluate something beyond the negative symptoms in schizophrenia; however, HDRS is affected by schizophrenic symptoms. Like this study, Grover et al. indicated that HDRS had significant relationships with PANSS Negative, PANSS General, and the total score (Grover et al., 2017).

The criterion validity of CDSS-P was analyzed through the sensitivity and specificity of cutoff scores. In other words, the sensitivity and specificity of cutoff scores were analyzed with regard to the capability of CDSS-P to distinguish schizophrenic depressed patients from non-depressed ones. In this study, the cutoff score was 8, having the highest power of distinguishing the two groups (sensitivity = 0.79 and specificity = 0.84). Similar findings were reported by the Brazilian version (Bressan et al., 1998), in which cutoff scores were 6 and 7 (sensitivity = 0.77 and specificity = 0.92). Kim et al. estimated the cutoff score at 9 (sensitivity = 0.94 and Specificity = 0.89), which is similar to the findings of the present study (Kim et al., 2006). In the Spanish version, the cutoff score was 5 (sensitivity = 0.94 and specificity = 0.86) (Sarró et al., 2004). It was reported 7 by the Singaporean version (sensitivity = 94.7 and specificity = 72.1) (Rekhi et al., 2018). In the Canadian version, it was estimated at 6 (sensitivity = 75 and specificity = 79) (Addington et al., 1992). However, cutoff scores were low in Spanish, Canadian, and Singaporean versions, a fact which might be because of considering patients with psychosis instead of schizophrenic patients. In general, the results of this study are consistent with previous findings. Accordingly, Lako et al. conducted a meta-analysis and estimated the internal consistency and convergent validity of CDSS at 0.82 and 0.81, respectively (Lako et al., 2012). They also showed that the cutoff score ranged between 5 and 9 (sensitivity and specificity were lower than 0.88). Their results are so close to the findings of this study.

In conclusion, CDSS-P is a valid and reliable scale which can be employed to evaluate depression in schizophrenic patients. According to the poor relationship between CDSS-P and PANSS components, CDSS-P evaluates depression regardless of schizophrenic symptoms. In other words, it is the only scale which has been validated for a schizophrenic population in Persian. Thus, it is easily usable. A very important research constraint was that other depression evaluation instruments such as *the Beck Depression Inventory* (BDI-II) and *the Ontgomery-Asberg Depression Rating Scale* were not employed to determine the convergent validity of CDSS. In addition, the divergent validity and interrater reliability were left undetermined in this study.

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Declaration of Competing Interest

On behalf of all authors, the corresponding author states that there

is no conflict of interest

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