

Turkish Validity and Reliability Study of the Suicide Caring Competence Scale: A Methodological Study

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What is already known on this topic?

- *Suicide is a preventable yet devastating act that affects not only the individual but also their family and the broader community, leaving long-term psychological and social consequences. A core principle of suicide prevention interventions are collaboration with family members and individuals living with the person at risk. Understanding the caregiving competencies and needs of family members who support individuals at risk of suicide plays a crucial role in strengthening primary, secondary, and tertiary prevention strategies.*

What this study adds on this topic?

- *The SCCS-TR has been demonstrated to be a valid and reliable measurement tool for assessing the caregiving competencies of family members who provide care to relatives at risk of suicide in Türkiye. This tool contributes to the evaluation and improvement of family-based suicide prevention efforts within the Turkish context.*

ABSTRACT

Objective: Suicide is a preventable public health problem with significant consequences for both individuals and their families. As caregivers play a central role in early detection and intervention efforts, this study aimed to evaluate the validity and reliability of the Suicide Care Competence Scale in the Turkish context (SCCS-TR).

Methods: This study was conducted with 147 family members providing direct care to patients at risk of suicide. A pilot study with 14 caregivers outside the main sample and a test-retest with 50 caregivers from the sample were performed. Data were collected with the Descriptive Information Form and the SCCS-TR. The validity of the scale was assessed through evaluations of language validity, content validity, face validity, and construct validity. To assess the reliability, analyses of stability and internal consistency were performed.

Results: The 18-item SCCS-TR demonstrated content validity index values ranging from 0.81-1 and was found to be factorable (Kaiser–Meyer–Olkin = 0.77; Bartlett's Test = 2052.00). The scale confirmed the 5-factor structure; it was determined that the factor loadings were between 0.50 and 0.91 and the fit indices ($\chi^2/df = 4.11$, Comparative Fit Index = 0.90, Tucker-Lewis Index = 0.93; Root Mean Square Error of Approximation = 0.08) were at an acceptable level. It was determined that the test-retest reliability of the scale was $r = 0.99$, and in the internal consistency assessment, the Cronbach's alpha reliability coefficient was 0.85, and the reliability coefficients for the subscales ranged from 0.89 to 0.70.


Conclusion: The SCCS-TR is a valid and reliable measurement tool in evaluating the care competency of family members who care for relatives at risk of suicide in Türkiye.

Keywords: Care, caregiver, reliability, suicide, validity

Introduction

Suicide is a destructive and preventable act that directly affects the individual and those around them, leaving lasting impacts on community mental health.¹ Various strategies are implemented in every country to prevent suicide. It is of utmost importance that these strategies are employed in a planned and coordinated manner through government collaboration with families, schools, workplaces, and relevant organizations, using a multidisciplinary approach.^{2,3} Suicide prevention interventions are classified into primary, secondary, and tertiary prevention efforts. Primary prevention focuses on identifying and eliminating factors that increase suicidal tendencies. Secondary prevention involves identifying risk groups and factors that may lead to a suicide attempt and implementing preventive measures. Tertiary prevention efforts aim

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to treat individuals who have attempted suicide and prevent relapse, and include efforts related to recognizing, preventing, and protecting individuals at risk by detecting warning signs of suicide.⁴ In suicide prevention efforts, the fundamental principle is cooperation with the family and those living with the individual. The immediate social environment is the support system that spends the most time with the individual. Within the scope of suicide prevention efforts, the family is often expected to provide physical, psychological, emotional, and spiritual support to the individual,⁵ as well as identify suicidal behaviors, contact mental health services, and support the treatment process.^{6,7} Suicidal behavior not only affects the individual but has negative effects on the family. To reduce the negative effects of suicidal behavior on family members and to prevent suicide attempts, it is crucial for healthcare professionals to inform family members about suicide, early warning signs, and prevention strategies.⁸ Educational programs organized for family members help them act more consciously and confidently in caregiving and in detecting suicide risks early.⁹⁻¹⁰ These programs reinforce their belief that family members can support the individual and help them feel hopeful and valued.⁸ Indeed, the literature highlights that caregivers often lack sufficient knowledge on suicide prevention strategies in high-risk situations, are unable to communicate properly with individuals who have attempted suicide, fail to recognize verbal and non-verbal signs of suicide, are unaware of necessary safety measures at home and are not provided with post-discharge education.^{5,6,10-12} Furthermore, many studies state that families experience confusion about what actions they should take regarding the issue, feel outside the caregiving role and become helpless, which leads to a loss of trust in healthcare professionals.^{11,12}

The theme for World Suicide Prevention Day from 2024 to 2026 is “Changing the Narrative on Suicide.” This emphasizes the need to reduce stigmatizing attitudes related to suicide and to increase awareness, making discussions on the topic more open and accessible.¹³ By shifting the narrative, there is a concerted effort to create an environment where both individuals at risk and their families feel more comfortable seeking help and engaging in conversations that can prevent further harm to the community. Additionally, Türkiye’s National Mental Health Action Plan includes a dedicated intervention framework for suicide prevention within its broader strategy to promote mental well-being. This plan emphasizes the development of comprehensive approaches that strengthen the early identification of risk factors, improve access to mental health services, and enhance community-based interventions.¹⁴ In this context, assessing the caregiving competencies of caregivers represents an important contribution to suicide prevention efforts. The implementation of a measurement tool specifically designed for this purpose in clinical settings and community mental health centers will help identify and address caregivers’ needs more effectively. Furthermore, future research can help inform the development of more targeted and evidence-based prevention strategies. However, in Türkiye, there is no standard measurement tool to determine the caregiving competence of those caring for individuals at risk of suicide. This study aims to adapt the Suicide Caring Competency Scale (SCCS) developed by Sun and colleagues (2014) to assess the caregiving competence of individuals caring for those at risk of suicide into Turkish. In this context, the research questions are as follows:

1. Is the SCCS valid in Turkish culture?
2. Is the SCCS reliable in a Turkish sample?

Methods

Study Design and Setting

This is a methodological, descriptive, and cross-sectional study. The study was conducted between April 2023 and March 2024 in 2 major

metropolitan cities of Türkiye at tertiary university education and research hospitals. The study was conducted with family members of patients who were admitted to the psychiatric wards due to suicide risk or attempts. The total bed capacity of psychiatric wards in the hospital where the study was conducted is 250.

Participants

The study population consisted of family members who were directly providing care to adult patients (aged 18 years and older) hospitalized in psychiatric wards following suicide attempts. According to the literature, the recommended sample size for scale development studies is typically five to ten times the number of items on the scale.¹⁵ In line with this recommendation, as the scale comprised 19 items, the target sample size was set at 190 participants. The inclusion criteria for participants were being 18 years of age and over, voluntarily agreeing to participate in the study, possessing the cognitive capacity to complete the survey, and being the direct caregiver of the patient. Considering these criteria, simple random sampling was used in participant selection. A total of 147 family members who met the inclusion criteria and agreed to participate were included in the study, corresponding to approximately 7.7 times the number of items on the scale. To evaluate the adequacy of the sample size, a power analysis was conducted using the “Power Analysis of Coefficient Alpha: One Group” module in the PASS 2023 software. In the analysis, the expected Cronbach’s alpha coefficient under the alternative hypothesis was specified as 0.35, while the alpha coefficient under the null hypothesis was defined as 0.00. Power values were calculated for different sample sizes at a significance level of $\alpha=0.05$. According to the results, achieving an 80% power level requires approximately 80-100 participants. The sample size of 147 participants in this study provides over 95% power, based on the PASS output.¹⁶ This finding indicates that the sample size is statistically adequate for conducting reliability analyses of the scale.

Additionally, the reliability of the scale was evaluated through a test-retest analysis. Caregivers who initially agreed to participate were informed about the retest procedure, and 50 caregivers consented to be interviewed again and were included in the test-retest analysis.^{17,18}

Instruments

Descriptive Information Form

The socio-demographic characteristics of family caregivers, specifically gender, place of residence, age, marital status, educational level, employment status, reported income level, cohabitation status, presence of a mental health diagnosis, degree of closeness to the individual receiving care, and the number of suicide attempts by the person receiving care, were collected via a questionnaire.¹¹

The Chinese Version of the Suicide Caring Competence Scale

The SCCS was developed by Sun et al (2014) to measure the care competence of family members providing care to individuals at risk of suicide. The SCCS consists of 19 items and includes 5 factors, namely proactive prevention, daily living care, seeking assistance from professional resources, seeking assistance from laypersons, and seeking assistance from religious resources. Proactive prevention is observing early warning signs and intervening before a crisis escalates. Daily living care entails providing essential support and assistance in everyday activities. Seeking assistance from professional resources is the process of seeking help from health professionals and the provision of medical resources. In contrast, seeking assistance from laypersons involves seeking help from trusted non-professionals. Finally, seeking assistance from religious resources pertains to using religious resources and perspectives to prevent a suicidal individual from committing suicide.

Each item is rated from 1 (strongly disagree) to 5 (strongly agree). There are no reverse-scored items in the scale. The total possible score range obtained using the scale ranges from 19 to 95. A higher score on the scale indicates an increased competence in suicide care. The Cronbach's alpha reliability coefficient for the original 19-item scale is 0.90, and the test-retest reliability is 0.81. It is noted that the SCCS can be used by nurses to assess family caregivers' suicide care competence and to identify training needs to improve it.¹¹ The scale has not been adapted for use with other cultures or translated into other languages.

Procedure

The data collection process of the study consisted of 2 stages. In the first stage, the adaptation of the scale to Turkish culture was carried out, and in the second stage, data was collected from the participants.

Translation and Cross-Cultural Adaptation

Initially, the SCCS was translated into Turkish in accordance with standard translation guidelines by 5 independent experts. The translation team consisted of 1 Academic Psychiatrist (Professor) and 4 Psychiatric Nursing Academics (2 Professors, 1 Associate Professor, and 1 Assistant Professor) who were fluent in both English and Turkish and possessed expertise in both cultural and mental health terminology.¹⁸ For the Turkish-to-English back-translation, a bilingual English linguist with a degree in English Language and Literature and proficiency in both languages was consulted. The back-translated version was then reviewed by 2 faculty members from the Department of Psychiatric Nursing. Based on feedback received from the experts, necessary revisions and adjustments were made to the scale items, thereby ensuring the linguistic validity of the instrument.

The Suicide Care Competence Scale in the Turkish context (SCCS-TR) language validity was determined using the Davis technique, and the relevance of each item in the scale to its intended purpose and its degree of representation were evaluated. According to this technique, feedback should be obtained from 5 to 40 professionals. The professionals were asked to evaluate each item of the scale using the following scale: "Score 1 = the item is not appropriate," "Score 2 = the item needs to be modified," "Score 3 = the item should be slightly revised," and "Score 4 = the item is very appropriate." By evaluating the scores given by each professional, items with a Content Validity Index (CVI) value below 0.80 were removed or revised. The CVI value should be 0.80 or higher.^{17, 19} To evaluate the items of the SCCS-TR, an evaluation form was sent via email to 11 professionals (Psychiatry Nursing Faculty Member, Psychiatrist, Psychologist, Sociologist). The experts were asked to assess the phrasing, content, and relevance of each item to the purpose of the scale. The evaluation revealed that the CVI values of each item in the SCCS-TR ranged from 0.80 to 1.00, confirming the language and content validity of the Turkish version of the scale.

Additionally, the readability, comprehensibility, length, clarity, and precision of the items in the SCCS-TR were assessed through face validity. For this purpose, a pilot study was conducted in which 14 caregivers, who were independently selected from the research population and providing care for relatives hospitalized in psychiatric clinics due to suicide risk, were interviewed. Based on the feedback from the participants, the scale items were finalized.

Data Collection

Caregivers were first informed about the purpose and significance of the study, and voluntary consent was obtained prior to participation. Face-to-face interviews with family members of patients at risk of

suicide were conducted during hospital visiting hours or at another time convenient for the caregivers. They were carried out 2-3 weeks after the patient's admission to ensure they were conducted after the crisis period.

All interviews were conducted in the visitors' lounge of the psychiatric clinic during non-visiting hours, with careful attention paid to ensuring privacy and confidentiality. The scales were clinician administered. The duration of the data collection process was approximately 15-20 minutes. During the interviews, some caregivers shared that they could not seek help from their close circle due to the stigma they experienced, and as a result, they had to mark "disagree" on the first 2 items of the SCCS-TR. In particular, mothers mentioned that they struggled to provide care for their male children who had attempted suicide, feeling helpless and powerless.

During the test-retest phase, caregivers were contacted 2-4 weeks after the initial interview. The literature suggests that this interval is appropriate, as it is sufficiently long to minimize the likelihood of participants recalling their previous responses, yet short enough to prevent genuine changes in the construct being measured.²⁰ At this stage, the interview was conducted online via video. An appointment was scheduled in advance, and caregivers were provided with a preliminary explanation regarding privacy and confidentiality.

Data Analysis

The research data were analyzed using IBM SPSS Statistics Standard Concurrent User V 29 (IBM SPSS Corp.; Armonk, NY, US) and AMOS statistical software packages. Descriptive data (frequency, percentage, mean, median, and interquartile range) were evaluated using descriptive statistical analysis. It has been reported that the Shapiro-Wilk test detects deviations from normality with higher sensitivity compared to the Kolmogorov-Smirnov test.^{21, 22} Therefore, the normality of the data distribution was assessed using the Shapiro-Wilk Normality Test.

The validity of the SCCS-TR was evaluated through content validity, face validity, and construct validity. Content validity refers to the relevance and comprehensiveness of the items in a measurement. After the Turkish translation of the content validity of SCCS, feedback was obtained from 11 experts, and the Davis technique was used. Subsequently, face validity was conducted with participants who were not part of the sample to determine the clarity, comprehensibility, and simplicity of the scale items. After obtaining the data, Exploratory Factor Analysis (EFA) was conducted to evaluate the construct validity of the SCCS-TR, using the Kaiser-Meyer-Olkin (KMO) measure and Bartlett's Test. For Confirmatory Factor Analysis (CFA), the χ^2/df ratio, Root Mean Square Error of Approximation (RMSEA), Comparative Fit Index (CFI), and Tucker-Lewis Index (TLI) were employed. SCCS-TR item discrimination was examined with item-total score correlation.

In the reliability studies of the SCCS-TR, Pearson correlation analysis and paired sample *t*-test were used to assess stability reliability (test-retest), and Cronbach's alpha internal consistency reliability coefficient analysis and item analysis were used to assess consistency. The significance level for statistical tests was set at $P < .05$.

Ethical Approval and Consent

Permission to use the scale was obtained via email from Fan-Ko Sun, who conducted the original validity and reliability study. Ethical approval for the study was granted by the İzmir Katip Çelebi University Institutional Review Board for Non-Interventional Research (Approval Date: August 25, 2022; Decision No: 0345). In addition, institutional

permissions were received from the Provincial Health Directorates (Date: October 31, 2023; No: 2023/17 and Date: April 11, 2023; No: 213315023).

Before data collection, participants were informed about the purpose and significance of the study, as well as the principle of confidentiality, and voluntary informed consent was obtained. During the study, the principles of the Helsinki Declaration and all human research regulations were strictly followed.²³

Results

Participant Characteristics

The average age of participants in the study was 46.85 years (SD = 12.20) (min = 24 - max = 76), and 58.5% (n = 86) were women. A total of 90.5% (n = 133) of participants reported having no mental disorder, and 95.9% (n = 141) believed in the existence of a creator such as God. Among the participants, 28.6% (n = 42) were the mothers of individuals

Table 1. Participants' Characteristics

Characteristics		$\bar{x} \pm sd$	M (min-max)
		n	%
Age, years		46.85 ± 12.20	48 (24-76)
Gender			
	Female	86	58.5
	Male	61	41.5
Marital status			
	Married	100	68.0
	Single	47	32.0
Place of residence			
	City	141	95.9
	Town	6	4.1
Highest level of education			
	Primary school and below	67	45.6
	Secondary school	46	31.3
	University	34	23.1
Employment status			
	Employed	81	55.1
	Unemployed	66	44.9
Economic status			
	Bad	65	44.2
	Moderate	81	55.1
	Good	1	0.7
Presence of mental illness			
	Yes	14	9.5
	No	133	90.5
Mental health diagnosis*	Anxiety	14	100.0
Treatment status			
	Yes	19	12.9
	No	128	87.1
Belief in a creator			
	Yes	141	95.9
	No	6	4.1
Caregiver role			
	Mother	42	28.6
	Father	17	11.6
	Sibling	32	21.8
	Children	15	10.2
	Spouse	41	27.9
Number of suicide attempts by patients			2 (1-9)
Methods of suicide**			
	Hanging	7	3.7
	Firearm usage	7	3.7
	Jumping from a height	39	20.4
	Drug overdose	120	62.8
	Other	18	9.4

%, column percentage; x, mean; M, median; n, Number of patients; sd, standard deviation.

*Missing data.

**Multiple responses obtained.

at risk of suicide, 27.9% (n = 41) were their spouses, and 21.8% (n = 32) were their siblings. The average number of suicide attempts by individuals at risk was 2 (min = 1 - max = 9), and 62.8% (n = 120) of them had overdosed (Table 1).

Validity

The findings regarding the validity of the SCCS-TR were obtained through structural validity analyses, including EFA (Table 2) and CFA (Table 3, Figure 1).

Construct Validity

Exploratory Factor Analysis: The data related to the EFA of the SCCS-TR are presented in Table 2. In order to evaluate the adequacy of the sample size in the study, KMO value was found to be 0.77, and the Bartlett's Test Chi-square value was 2052.00 ($P = .001$). The total explained variance ratio of the study is 76%, and a statistically significant difference was found ($P = .001$).

In this study, the SCCS-TR consists of 6 factors, as opposed to the original scale. The sixth factor is composed of a single item (Item 5 = "I will look for help from resources on suicide prevention (books or the internet) to prevent him/her from committing suicide"). Therefore, the item from the sixth factor was removed, and the scale was finalized with 18 items and 5 factors. The findings related to the obtained factors are as follows:

Factor 1: The proactive prevention subscale consisted of items 6, 7, 9, 10, 11, 12, and 16. The factor loadings ranged from 0.505 to 0.847 and a variance explanation rate of 24.71%; the minimum and maximum scores were 7-35.

Factor 2: The seeking assistance from professional resources subscale consisted of items 3, 5, and 17. The factor loadings ranged from 0.778 to 0.913, and a variance explanation rate of 15.97%; the minimum and maximum scores were 3-15.

Factor 3: The daily living care subscale consisted of items 8, 13, 14, and 18. The factor loadings ranged from 0.623 to 0.844, and a variance explanation rate of 14.96%; the minimum and maximum scores were 4-32.

Factor 4: The seeking assistance from laypersons subscale consists of items 1 and 2. The factor loadings ranged from 0.849 to 0.870, and a variance explanation rate of 10.87%; the minimum and maximum scores were 2-10.

Factor 5: The seeking assistance from religious resources subscale consisted of items 4 and 15. The factor loadings ranged from 0.738 to 0.852, and a variance explanation rate of 9.85%; the minimum and maximum scores were 2-10.

Confirmatory Factor Analysis: The data related to the SCCS-TR confirmatory factor analysis are presented in Table 3 and Figure 1. Confirmatory factor analysis was conducted to validate the structure of the scale consisting of 18 items and 5 factors. The model obtained for the scale was statistically significant and confirmed to consist of 5 subscales ($\chi^2 = 493.790$; $df = 120$; $P < .001$). The goodness-of-fit indices for this model were found to be $\chi^2/df = 4.11$, CFI = 0.90, TLI = 0.93, and RMSEA = 0.08.

The Item-Total Score Correlation

The findings of the item-total score correlation analysis, conducted to evaluate the item discrimination of the SCCS-TR, are presented in Table 2. A statistically significant correlation was shown between each SCCS-TR item and the total scale score, ranging from moderate to high ($r = 0.396-0.813$; $P < .001$).

Table 2. Validity and Reliability of SCCS-TR

Factors	SCCS-TR Item	Item Contents	Factor Loads	Explained Variance (%)	Cronbach's Alpha Before Item Removal	Cronbach's Alpha After Item Removal	Cronbachs'/Alpha (α)	Min-Max Scores	Item-Total Score Correlation
Proactive prevention Factor 1	6	I will help him/her take medicine on time to prevent him/her from committing suicide.	0.769	24.712	0.783	0.771	0.892	7-35	0.627*
	7	I will spend time to convey care to him/her to prevent him/her from committing suicide.	0.775			0.773			0.514*
	9	I will watch his/her behavior to observe the warning signs of suicide.	0.808			0.765			0.688*
	10	I will watch his/her emotions to observe the warning signs of suicide.	0.847			0.762			0.756*
	11	I will watch his/her face to observe the warning signs of suicide.	0.805			0.766			0.770*
	12	I will hear his/her spoken language to observe the warning signs of suicide.	0.794			0.759			0.813*
	16	I will take him/her to the hospital immediately when he/she is at a high risk for suicide.	0.505			0.780			0.420*
Seeking assistance from professional resources Factor 2	3	I will look for help from medical professionals to prevent him/her from committing suicide.	0.913	15.976	0.783	0.767	0.870	3-15	0.537*
	5	I will help him/her go to the hospital punctually to prevent him/her from committing suicide.	0.859			0.764			0.655*
Daily living care Factor 3	17	I will provide basic care for living (food, clothes, accommodation and transportation) to meet his/her needs.	0.778			0.767			0.555*
	8	I will teach him or her how to address their problems to prevent him/her from committing suicide.	0.668	14.964	0.783	0.762	0.798	4-32	0.607*
Seeking assistance from laypersons Factor 4	13	I will hide dangerous items (knives and medicines) to prevent him/her from committing suicide.	0.844			0.778			0.559*
	14	I will keep watch on his/her whereabouts to prevent him/her from committing suicide.	0.623			0.754			0.677*
Seeking assistance from religious resources Factor 5	18	I will arrange activities (housework and exercise) to transfer his/her suicidal ideas.	0.809			0.771			0.556*
	1	I will look for help from family members and relatives to prevent him/her from committing suicide.	0.870	10.874	0.783	0.788	0.797	2-10	0.407*
Total	2	I will look for help from neighbors and friends to prevent him/her from committing suicide.	0.849			0.786			0.396*
	4	I will look for help from religious resources to prevent him/her from committing suicide.	0.738	9.852	0.783	0.801	0.702	2-10	0.402*
	15	I will enlighten him or her on religion to prevent him/her from committing suicide.	0.852			0.777			0.434*
	Item removed	I will look for help from resources on suicide prevention (books or the internet) to prevent him/her from committing suicide	0.864	7.062	0.783	0.849	-	-	-
				76.377			0.849		
							Kaiser-Meyer-Olkin (KMO) = 0.766		
							Bartlett's Test = 2052.004; P = .001		

*P< .001.

Table 3. Goodness-of-Fit Index Values of the SCCS-TR

Model	The Goodness of Fit				
	χ^2 (df)	χ^2/df	CFI	TLI	RMSEA
Good Fit Indices		<3	>0.97	>0.97	<0.05
Acceptable Fit Indices		<5	>0.90	>0.90	<0.08
SCCS-TR	731.00 (125) <i>P</i> < .001	5.848	0.90	0.92	0.08

Evaluation of the SCCS-TR Acceptable Fit Index Acceptable Fit Index Acceptable Fit Index Acceptable Fit Index

χ^2/df , Chi-square/degrees of freedom, CFI, Comparative Fit Index; TLI, Tucker-Lewis Index; RMSEA, Root Mean Square Error of Approximation.

**P* < .05.

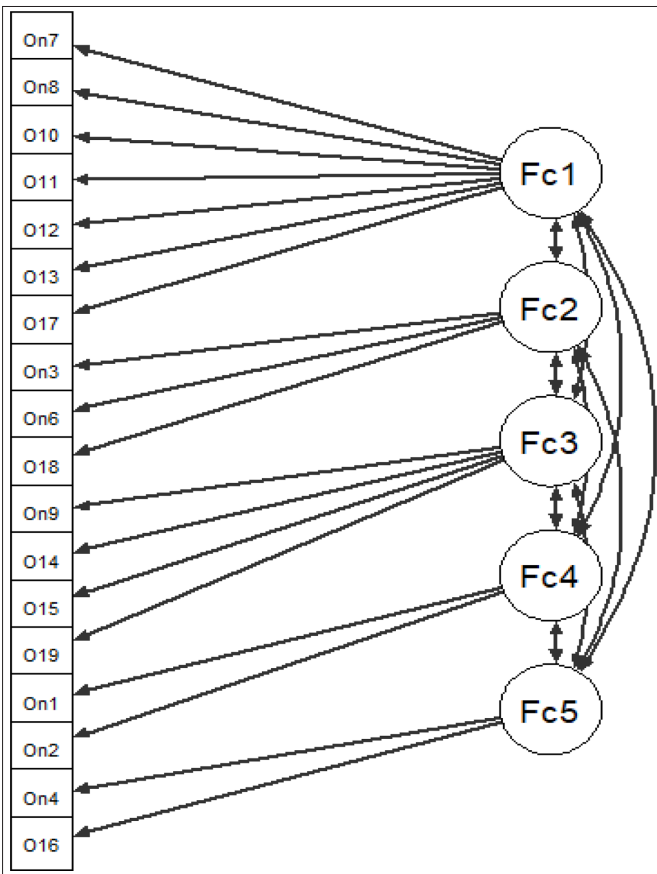


Figure 1. Confirmatory factor analysis model of the - SCCS-TR.

Reliability

The findings regarding the reliability of the SCCS-TR were obtained through test-retest analysis, internal consistency (Cronbach’s alpha) analysis, and item-total score analysis (Table 4).

Test-Retest Analysis

The data for the test-retest analysis conducted to evaluate the reliability of SCCS-TR are presented in Table 4. A statistically significant, very high positive correlation was found between the scores obtained from the initial test and the retest conducted 2-4 weeks later (*r* = 0.99;

P = .000) (Table 4). Furthermore, when the SCCS-TR test and retest scores were compared, no statistically significant difference was found (*t* = 0.86; *P* = .39) (Table 4).

Internal Consistency (Cronbach’s Alpha) Analysis

The results of the internal consistency analysis, conducted to assess whether the SCCS-TR measures the same attribute, are presented in Table 2. The overall Cronbach’s Alpha reliability coefficient for the SCCS-TR was found to be 0.85. Specifically, the reliability coefficients for the subscales were as follows: 0.89 for proactive prevention, 0.87 for seeking assistance from professional resources, 0.80 for daily living care, 0.80 for seeking assistance from laypersons, and 0.70 for seeking assistance from religious sources (Table 2).

Item-total Score Analysis

The item-total score analysis conducted regarding the removal of an item from the SCCS-TR is presented in Table 2. Before the removal of item 5, the Cronbach’s Alpha value was 0.783; however, after the removal of item 5, the Cronbach’s Alpha value increased to 0.849 (Table 2).

Discussion

The study found that the SCCS-TR, translated and adapted to Turkish culture, is a valid and reliable tool. To evaluate the adequacy of the sample size within the scope of construct validity, it is expected that the KMO value²⁴ be greater than 0.50 and that the Bartlett Test be significant (*P* < .05).²⁵ According to the study results, the sample size was found to be appropriate and sufficient for factor analysis. For evaluating the model-data fit of the SCCS-TR, an EFA analysis was conducted.¹⁵ In the first stage, the SCCS-TR consisted of 6 sub-factors, differing from the original model.²⁵ However, it was observed that the sixth factor consisted of only 1 item, and the factor loadings did not significantly increase in any factor. The literature indicates that a factor should consist of at least 2 items; otherwise, it is recommended to remove the item from the scale.¹⁵ In line with this, item 5 was removed, resulting in the SCCS-TR with 18 items and 5 factors.

In the study, the factor loadings for the subscales ranged between 0.50 and 0.91, while the factor loadings of the original scale ranged from 0.46 to 0.97.¹¹ Factor loadings reflect the correlation of an item with the corresponding factor. In the evaluation, a factor loading of 0.32-0.50 is interpreted as a “low level” of correlation, 0.50-0.60 as a “moderate level” of correlation, 0.60-0.70 as a “high level” of correlation, and 0.70 or above

Table 4. Test-Retest Results of the SCCS-TR

	Comparison of Test-Retest				Correlation of Test-Retest		
	n	$\bar{x} \pm SS$	<i>t</i> *	<i>P</i>		<i>r</i>	<i>P</i> **
Pre-test	50	76.54 ± 7.43	0.864	.392	Pre-Test & Post-Test	0.988	<.001
Post-test	50	76.42 ± 7.37					

*Paired Sample *t*-Test.

***P* < 0.05.

as an “excellent level” of correlation.²⁶ Accordingly, like the original scale, the items of the SCCS-TR showed a “moderate and high level” correlation with the relevant subscales. Moreover, the explained variance ratio confirms that the factors in the model explain a substantial portion of the total variance, thus validating that the factors are well-defined.²⁷

The fit indices of the model identified through EFA and CFA were evaluated.²⁷ For acceptable fit values, the chi-square/df ratio should be <5.00, the CFI value >0.90, the RMSEA value <0.08, and the TLI value >0.90.²⁸ Therefore, it was concluded that the fit indices of the SCCS-TR were at an acceptable level, and the scale structure was confirmed.

The item-total score correlation assesses the relationship between the score of each individual item and the overall scale score. In the process of item selection, a correlation coefficient greater than 0.25 (or 0.20) is generally considered acceptable.²⁹ Based on this criterion, all items of the SCCS-TR demonstrate strong correlations with the total scale score, indicating that each item effectively measures the intended construct in a consistent manner.

In accordance with the reliability studies, the test-retest procedure in this study was conducted with 34% of the sample, like the original scale study.¹¹ Based on the relationship between the test and retest scores, it was determined that the results obtained from the SCCS-TR did not change over time, were highly consistent, and that measurement errors were minimal.^{24,30} Furthermore, the absence of a significant difference between the test and retest scores supports the finding that the results are consistent and reliable. In the study, the internal consistency of the SCCS-TR, including both the total scale and its subscales, was found to be “reliable” and “highly reliable” based on the Cronbach’s alpha reliability coefficient.²⁷ Therefore, it can be stated that the SCCS-TR is a reliable scale. Moreover, after the removal of item 5, the significant increase in the Cronbach’s alpha reliability coefficient further indicates that the scale, consisting of 18 items and 5 subscales, has high reliability.

Limitations

This study has several limitations. First, although it was initially planned to be conducted across multiple centers, data collection permission was granted for only 2, and the study was therefore carried out in only these 2 sites. Nevertheless, the fact that both centers were located in Türkiye’s largest metropolitan cities offers an advantage in terms of sample diversity. Second, because the researchers were not actively working in clinical settings, it was challenging to identify and contact family members who provide care to individuals at risk of suicide. This limited access constitutes a constraint regarding sample recruitment and representativeness. The study was concluded once the sample size reached 7.7 times the number of scale items. Although this sample size meets the minimum thresholds recommended in the literature, conducting both the EFA and CFA on a single dataset due to the single-sample design represents a methodological limitation.^{31,32}

Conclusion

This study examined the validity and reliability of a Turkish version of the Suicide Caring Competence Scale. It can be concluded that the SCCS-TR is a valid and reliable measurement tool for assessing the caregiving competence of individuals providing care to those at risk of suicide in Türkiye. The final scale consisted of 18 items and 5 sub-scales and uses a 5-point Likert type. The total scores range from 18 to 90. The scale does not contain any reverse-coded items, and as the total and subscale scores increase, the caregiving competence of the caregivers also increases.

The SCCS-TR can be used to assess the caregiving competence of individuals (like nurses) providing direct care to those at risk of suicide.

It may also be employed to identify caregivers who may benefit from training and be used to assess the effectiveness of such interventions. Beyond its current scope, the SCCS-TR holds potential for evaluating caregiving competence among adults in the general population, regardless of whether the care recipient is at risk of suicide. To support the broader application of the scale, further research involving larger and more diverse samples is recommended. Such studies would contribute meaningfully to secondary and tertiary suicide prevention efforts and to the promotion of mental health in the community.

Data Availability Statement: The data that support the findings of this study are available on request from the corresponding author.

Artificial Intelligence Usage Statement: The authors declared that no Artificial Intelligence Tool was used in the preparation of the manuscript.

Ethics Committee Approval: Ethical committee approval was received from the Ethics Committee of İzmir Katip Çelebi University (Approval no: -0345, Date: 25.08.2022).

Informed Consent: Written informed consent was obtained from family members who participated in this study.

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