





ORIGINAL ARTICLE

The Turkish version of the Nursing Students' Perceptions of Instructor Caring Scale: An assessment of psychometric properties

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Abstract

Purpose: The aim of this study was to determine the psychometric properties of the Turkish version of the Nursing Students' Perceptions of Instructor Caring (NSPIC-Tr) Scale.

Design and Methods: Methodological study. The sample of this study consisted of 344 nursing students.

Findings: Its four-factor structure was confirmed with explanatory factor analysis (EFA) and confirmatory factor analysis (CFA) results. The results of CFA showed that the scale's fit index supported the EFA. The scale's Cronbach's alpha internal consistency coefficient had high reliability.

Practice Implications: NSPIC-Tr is a valid and reliable scale for the assessment of Turkish nursing students' perceptions of instructor caring.

KEYWORDS

caring, caring behavior, clinical instructor, NSPIC-Tr, nursing education, nursing student perceptions'

1 | INTRODUCTION

Clinical instruction, a fundamental component of nursing education, prepares students for real-life nursing practices by enabling them to transfer theoretical knowledge into practice and engage in experiential learning opportunities.¹ A high-quality nursing education gives students the opportunity to build and improve their competencies.^{2,3} The purpose of caring-based clinical education is, on the other hand, to equip students with a general perspective on nursing care.⁴ Research has shown that caring-based clinical instruction helps to decrease students' anxiety and increase their self-confidence, motivation, and ability to associate theoretical knowledge and practice.⁵ Furthermore, clinical instruction helps students acquire caring behaviors and has a positive effect on learning.⁶ Conversely, studies have shown that students who experience a non-caring learning environment may become hardened, worn down, depressed, stressed, and anxious. Also, it has been demonstrated that such feelings may negatively affect students' learning capacity and ability to build nursing skills.^{7,8}

Instructors are the most significant individuals who help students to acquire the necessary caring skills in a clinical setting. Labrague asserted that the caring behaviors of instructors positively affect the caring behaviors of nursing students.⁹ Clinical instructors are also responsible for helping nursing students attain learning outputs. Becker and Neuwirth¹⁰ defined the clinical instructor as a person who integrates theoretical knowledge with practice and creates an optimal learning setting. Hanson and Smith¹¹ stated that uncaring clinical instructors cause negative feelings in nursing students, such as rejection, discouragement, loss of confidence, hopelessness, and emotional turmoil. According to Watson,¹² caring interactions between clinical instructors and students are similar to patient-nurse interactions. Studies have supported the fact that the caring relationships between clinical instructors and students contribute to the growth of students as caring professional nurses.¹³⁻¹⁵ Students can learn to be professional if they perceive a caring-based learning setting.^{14,16,17} If nursing students integrate caring into clinical practices, they are more likely to become qualified nurses and offer better nursing services.

Watson (2006) stated that caring is a fundamental concept in nursing education and described the purpose of nursing education as providing students with a general perspective on nursing care. The conceptual framework of Watson's theory offers an effective model for understanding the concept of caring that focuses on interpersonal and transpersonal processes. The Nursing Students' Perceptions of Instructor Caring (NSPIC) instrument is based on Watson's Theory of Human Caring and is a highly valid and reliable scale developed to assess the perceptions of students toward instructor caring and their expectations from instructors in a clinical setting.¹⁴ The scale was developed by Wade and Kasper¹⁴ in English in the United States of America. NSPIC also has Chinese¹⁸ and Italian¹⁹ versions. Results of studies using the NSPIC measurement instrument revealed that students have low perception scores for instructor caring.^{4,17,20}

In Turkey, studies addressing caring perceptions toward clinical instructors are absent from the literature. Such studies are essential; the perceptions of nursing students toward instructor caring may reveal how students learn to care for their patients. However, there is no reliable measurement instrument for nursing students in Turkey to assess clinical instructors' caring.

This study was founded on the belief that NSPIC can help to define the critical points to be addressed and corrected to increase the quality of nursing students' clinical education. Because the perception of clinical instructor caring in nursing education is a universally accepted problem, the measurement instruments to identify this problem should be universal as well. Instruments to be used for this purpose must be assessed in terms of their compatibility with different cultural structures. The aim of this study was to adapt NSPIC to the Turkish language and examine the Turkish version's validity and reliability, thereby obtaining a measurement instrument for the assessment of clinical instructor caring that can be completed by nursing students in the Turkish culture. The ultimate goal is to improve the quality of nurses' clinical education in Turkey.

2 | MATERIALS AND METHODS

2.1 | Study design and sample

A methodological study was developed. This study was conducted with students in the nursing department of a university located in eastern Turkey. It was performed from March to June 2018. In scale validity and reliability studies, the sample size must be 10 to 20 times the number of items.¹⁵ Accordingly, the appropriate study sample size was calculated to be 310–10 times the 31 items comprising the NSPIC scale—and 344 volunteer students were included in the study. Inclusion criteria were Turkish literacy and agreeing to participate in the study. Exclusion criteria were any diagnosed psychiatric disorder and any reported symptoms of depression. Students fulfilling the inclusion criteria were selected by non-probability random sampling method.

2.2 | Instruments

2.2.1 | Descriptive characteristics form

The descriptive characteristics form was developed by this study's researchers based on existing research literature^{2,18} and consisted of 18 questions regarding students' demographic characteristics, such as age, sex, place of birth, income status, and marital status.

2.2.2 | Nursing Students' Perceptions of Instructor Caring Scale

Along with the descriptive characteristics form, the 344 participants in this study also completed NSPIC-Tr. Aside from being written in Turkish, the NSPIC-Tr instrument maintained the characteristics typical of any NSPIC scale. NSPIC is a 6-point, Likert-type scale developed by Wade and Kasper¹⁴ based on Watson's Theory of Human Caring to assess the perceptions of nursing students toward clinical instructor caring. Consisting of a total of 31 items, the English-version scale has five subscales (a) instills confidence through caring, (b) supportive learning climate, (c) appreciation of life's meanings, (d) control vs flexibility, and (e) respectful sharing. Items are scored from 1 to 6, with 1 meaning slightly disagree and 6 meaning strongly agree, and the total score varies between 31 and 186. As the score increases, caring perception is deemed to increase as well. The scale does not have a cut-off score. NSPIC's total Cronbach's alpha reliability coefficient is 0.97.¹⁴

2.3 | The process of cultural adaptation

The scale's cultural adaptation process involved three steps (a) language validity, (b) content validity, and (c) pilot application. In the language validity step, NSPIC was translated from English into Turkish by the researchers, two expert linguists, and two faculty members. The Turkish version of the scale is referred to as NSPIC-Tr in this article. The scale items translated into Turkish were reviewed by the two expert linguists, and the original version and the translated version were compared. In this comparison, no change in meaning was observed in the scale items, and the scale's language validity was completed.

2.4 | Psychometric testing of the NSPIC

2.4.1 | Validity

Explanatory and confirmatory factor analysis (CFA) methods were used to determine the scale's construct validity. Before the explanatory factor analysis (EFA), Kaiser-Meyer-Olkin (KMO) analysis was used to determine the sampling adequacy, and Bartlett's test of sphericity was used to assess the sampling test size. For the sample size to be appropriate for factor analysis, KMO must be

above 0.60, and the result of Bartlett's test of sphericity must be statistically significant.²¹

The EFA for the NSPIC-Tr was conducted using principal component analysis and Varimax rotation. As a result of factor analysis, previous research has determined that the factor load values for the items in the NSPIC scale must be at least 0.30; items below this value should be excluded from the scale (Büyüköztürk, 2018). Following EFA, CFA was performed to support the findings of subscales. As a result of CFA, the following data-fit index lower limits were accepted for the model: χ^2/sd ratio ≤ 5 ; root mean square error of approximation (RMSEA) ≤ 0.08 ; and GFI, CFI, and IFI values above 0.90, where RMSEA means root mean square error of approximation, GFI means goodness-of-fit index, CFI means comparative fit index, and IFI means incremental fit index.²²

2.4.2 | Reliability

Cronbach's alpha internal consistency coefficient technique is recommended for the analysis of Likert-type scales. The reliability coefficient deemed adequate for a measurement instrument should be as close to 1 as possible. A measurement instrument is assessed to be not reliable if Cronbach's alpha coefficient is lower than 0.40, poorly reliable between 0.40 and 0.59, highly reliable between 0.60 and 0.79, and very reliable between 0.80 and 1.00.²³

Item-total correlation coefficients were checked to study the correlation between NSPIC-Tr test-item scores and the total test score. This study set the minimum value of the coefficient at 0.20, which research literature says is an acceptable minimum.²³ For test-retest analysis of NSPIC-Tr, the instrument was administered to 30 students again 3 weeks after the students had first completed it, and the time invariance of the scale was assessed with test-retest correlation.²⁴

2.4.3 | Statistical analysis

Study data were assessed using the SPSS 16.0 for Windows software (SPSS Inc, Chicago, Illinois) and AMOS 24.0. In addition to its descriptive statistics (number, percentage, mean, and standard deviation) used to assess the descriptive characteristics of study participants, this software was used in the analysis of the psychometric properties of NSPIC-Tr. The significance level was accepted as 0.05.

2.5 | Ethical considerations

During the process of adapting the scale to Turkish culture, Wade and Kasper were contacted via email, and the necessary permission was received to use the NSPIC-Tr scale in this study. Written consent to perform the study was obtained from the Dicle University Gynecology and Obstetric Clinics Department where the study was conducted, as was approval from the Dicle University Ethics Committee for Clinical Investigations (No. 2017/204). Furthermore, participants were informed of the study's purpose and assured that

their personal information would be protected; volunteers were used in the study.

3 | RESULTS

The average age of the 344 students participating in the study was found to be 21.52 years \pm 1.96 (min = 18, max = 36) and the majority of the participants were female (54.7%). Among the participants, 32.3% of the students were in the third year of nursing school at the time of the study, 97.4% of them were single, and 61.9% of them lived in the city. Income equaled expenses for 57.8% of the students, and 81.1% of them were from elementary families.

3.1 | Construct validity

English and Turkish versions of the scale were presented to experts for construct validity. Both versions were emailed to 10 faculty members who are experts in their fields (seven of them from Obstetrics and Gynecology Nursing, two from Internal Diseases Nursing, and one from Public Health Nursing). Davis' technique was used for construct validity. Davis' technique ranks expert opinions in four different categories, which are (a) very appropriate, (b) highly appropriate, (c) slightly appropriate, and (d) not appropriate. In this technique, the number of experts selecting the (a) and (b) options are divided into the total number of experts, and the item's construct validity index (CVI) is obtained (Davis, 1992). CVI values of the draft scale were found to average 0.95 and ranged between 0.60 and 1.00. In this step, statements that required correction according to the experts were also reviewed, and the prefinal version of NSPIC was prepared.

3.1.1 | Pilot application

Ten students participated in the pilot application of the prefinal NSPIC-Tr as designed using the experts' opinions. Results obtained from the pilot application were not included in the sampling. At the end of the pilot, no misunderstood questions were present in the scale. Thus, the NSPIC-Tr administered during the pilot was deemed the final version.

3.2 | Psychometric test results

3.2.1 | Validity

Before the factor analysis, a KMO sampling adequacy test and Bartlett's test of sphericity were performed to assess whether the sampling was adequate and the factor correlation matrix was suitable. The KMO result was 0.937, and Bartlett's test result was 6.163 ($P = .000$), showing that the sample size was sufficiently large to conduct factor analysis and the psychometric testing of a scale.

To determine the number of subscales in the NSPIC-Tr, first of all, EFA was conducted. The analysis showed that NSPIC-Tr had a four-factor structure with an eigenvalue of over 1.00. The percentage of cumulative variability explained by a model with four dimensions was 58.320%. It was determined that the first factor explained 39.229%

of variability with an eigenvalue of 11.769%. The second factor explained 9.791% of variability with an eigenvalue of 2.937%. The third factor explained 6.16% of variability with an eigenvalue of 1.555%, and the fourth factor explained 5.27% of variability with an eigenvalue of 1.235%.

In the four-factor model, the first factor consisted of 12 items and, because the content of these items seemed to be based mostly on how the instructor instilled confidence in the student, factor 1 was named “instills confidence through caring”. This name and the names of the other factors appear in Table 1. The second factor consisted of

six items, the content of which seemed to concern the assessment of a supportive environment created by the instructor. Therefore, factor 2 was named “supportive learning climate”. All seven items in factor 3 were reverse-scored and assessed the behaviors between the control and the flexibility shown by the instructor to the student. Thus, it was considered appropriate to name it “control vs flexibility”. As the last factor was composed of five items focused on personal sharing, it was deemed suitable to name it “respectful sharing”.

Findings regarding factor loads of the four NSPIC-Tr subscales were obtained by applying factor rotation. The findings showed that the factor

TABLE 1 Item-score for the NSPIC-Tr and distribution of item-total correlations

	Mean (SD)	Factor loading	r
Factor 1: Instills confidence through caring			
1. Shows genuine interest in patients and their care.	4.29 (1.77)	.679	.617
3. Instills in me a sense of hopefulness for the future.	4.17 (1.57)	.730	.706
4. Makes me feel that I can be successful.	4.17 (1.59)	.816	.726
5. Helps me envision myself as a professional nurse.	3.94 (1.59)	.724	.609
16. Serves as a trusted resource for personal problem-solving.	4.51 (1.42)	.729	.710
17. Offers support during stressful times.	4.04 (1.49)	.727	.606
18. Accepts my negative feelings, while helping me to see the positive aspects.	4.11(1.39)	.770	.646
19. Allows me to express my true feelings.	4.27 (1.42)	.773	.723
21. Inspires me to continue my knowledge and skills development.	4.21 (1.45)	.775	.683
27. Helps me find personal meaning in my experiences.	4.11 (1.41)	.695	.597
28. Encourages me to see others' perspectives about life.	4.07 (1.50)	.710	.581
29. Helps me understand the spiritual dimensions of life.	3.83 (1.59)	.696	.530
Factor 2: Supportive learning climate			
2. Displays kindness to me and others.	4.65 (1.51)	.619	.710
6. Makes me feel like a failure. ^a	4.40 (1.74)	.463	.562
7. Does not believe in me. ^a	4.68 (1.69)	.528	.561
8. Cares about me as a person.	4.71 (1.48)	.712	.690
9. Respects me as a unique individual.	4.79 (1.37)	.741	.722
10. Is attentive to me when we communicate.	4.62 (1.51)	.707	.616
Factor 3: Control vs flexibility			
20. Discourages independent problem-solving. ^a	4.30 (1.64)	.653	.474
22. Makes me nervous in the clinical laboratory. ^a	4.10 (1.66)	.722	.520
23. Does not trust my judgment in the clinical laboratory. ^a	4.43 (1.57)	.762	.621
24. Seems caught up in his or her own priorities, rather than responding to my needs. ^a	4.15 (1.66)	.716	.525
25. Makes demands on my time that interfere with my basic personal needs. ^a	4.19 (1.67)	.742	.574
30. Is inflexible when faced with unexpected situations (happenings). ^a	3.95 (1.63)	.635	.396
31. Uses grades to maintain control of students. ^a	3.23 (1.73)	.443	.262
Factor 4: Respectful sharing			
11. Inappropriately discloses personal information about me to others. ^a	4.83 (1.69)	-0.377	.403
12. Does not reveal any aspects of his or her personal side. ^a	4.00 (1.51)	-0.670	.280
13. Acknowledges his or her own limitations or mistakes.	3.59 (1.49)	.554	.475
14. Makes himself or herself available to me.	4.51 (1.48)	.338	.599
15. Clearly communicates his or her expectations.	4.75 (1.39)	.478	.665

Note: NSPIC-Tr stands for Nursing Students' Perceptions of Instructor Caring–Turkish Version, a scale translated to Turkish that measures nursing students' perceptions of how clinical instructors show care and empathy for their students' learning processes. SD stands for standard deviation, and r stands for item-total correlation.

^aIndicates reverse-scored.

load of Item 26, which read “focuses on completion of patient care tasks, rather than the patient’s needs”, was below 0.30 in all four subscales. Therefore, this item was excluded from the first modeling, and a second-factor analysis was performed. As a result, it was detected that the factor load varied between 0.278 and 0.816 in the new model, and items 11 and 12, defined in Table 1, were observed to have a negative load.

Then, a CFA was carried out to test the construct validity of NSPIC-Tr. The model was found to have a good fit based on $\chi^2 = 1323.0$, $SD = 438$ and $\chi^2/df = 3.02$. The GFIs in the model—adjusted GFI, CFI, and GFI, which were created to test the resultant model—were 0.85, 0.91, and 0.90, respectively, further supporting the finding that the model was acceptable. RMSEA was 0.082 and, as this value was less than 0.10, the model was considered acceptable. The CFA result was consistent with the EFA result.

3.2.2 | Reliability

In the internal consistency analysis, item-total correlation coefficients were detected to be below 0.30 for three items: 0.280 for item 12, 0.262 for item 31, and -0.73 for item 26. Because the item-total correlation coefficients were found to be above 0.25 for items 12 and 31, the decision was made to keep them in the scale. Item 26 was excluded from the scale in line with the EFA analysis. Table 1 presents the item-total correlations obtained as a result of the reliability analysis that was repeated with the remaining 30 items (excluding item 26).

The mean value and Cronbach’s alpha for the NSPIC-Tr total and subscales are shown in Table 2. The total Cronbach’s alpha coefficient was 0.94, suggesting high reliability. The Cronbach’s alpha was 0.93 for factor 1, 0.83 for factor 2, 0.83 for factor 3, and 0.68 for factor 4. Mean values of the NSPIC-Tr subscales showed that the highest-ranked subscale was factor 2, “supportive learning climate” (mean = 4.63, $SD = 0.39$). The lowest-ranked subscale was factor 3, “control vs flexibility” (mean = 4.05, $SD = 1.20$).

The relationship between scores obtained from test-retest was examined by Pearson’s correlation analysis to assess the time invariance of the scale. A positive, strong, and statistically highly significant relationship was observed between the scores of the two measurements taken with a 3-week interval (NSPIC-Tr total $r = .762$, $P = .000$). Research literature has stated that the resulting coefficient is accepted as an indicator of the time invariance of the scale, and a correlation value between 0.70 and 1.00 indicates a high-level relationship, while a correlation value between 0.30 and 0.70 indicates a mid-level relationship.²⁵ According to test-retest results in this study, the correlation values of factors 1, 2, and 3 demonstrated a high-level relationship, and factor 4 showed a mid-level relationship. The time invariance of the entire scale was proven (Table 3).

4 | DISCUSSION

In this study, the NSPIC scale developed by Wade and Kasper¹⁴ was adapted to the Turkish language. The assessment of psychometric

TABLE 2 Descriptive statistical measures of the NSPIC-Tr total and subscales

NSPIC-Tr	Cronbach’s alpha	Mean \pm SD (min-max)
Instills confidence through caring	0.93	4.19 \pm 0.88 (min = 3.84, max = 4.72)
Supportive learning climate	0.83	4.63 \pm 0.39 (min = 4.40, max = 4.79)
Control vs flexibility	0.83	4.05 \pm 1.20 (min = 3.22, max = 4.43)
Respectful sharing	0.68	4.34 \pm 1.24 (min = 3.59, max = 4.83)
NSPIC-Tr total	0.94	4.29 \pm 1.02 (min = 3.59, max = 4.83)

Note: NSPIC-Tr stands for Nursing Students’ Perceptions of Instructor Caring–Turkish Version, a scale translated to Turkish that measures nursing students’ perceptions of how clinical instructors show care and empathy for their students’ learning processes. SD stands for standard deviation.

properties in a sample group consisting of Turkish nursing students revealed that the NSPIC-Tr scale is valid and reliable.

4.1 | Validity

EFA and CFA were used to test the construct validity of NSPIC-Tr. Before the factor analysis, the KMO sampling adequacy test and Bartlett’s sphericity test were conducted to determine whether the sampling was adequate and the factor correlation matrix was appropriate. The KMO result and Bartlett’s test result showed that the sample size was sufficiently large to conduct factor analysis and the psychometric testing of a scale.

In a departure from the original version of the scale, some scale items of NSPIC-Tr were loaded in different subscales as a result of EFA. Furthermore, item 26 of the original English language instrument, which read “focuses on completion of patient care tasks, rather than the patient’s needs,” had a factor load below 0.30 in the analysis of NSPIC-Tr and was therefore excluded from the Turkish version of the scale (Büyükoztürk, 2018). Similarly, in the Chinese and Italian versions of NSPIC, which were created before the Turkish version, scale items were loaded in different subscales than the original NSPIC.^{2,18} Changes in these items may have resulted from differences in sampling or in the culture, race, ethnic background, and/or social factors of the students participating in the various studies. While the original¹⁴ and Chinese¹⁸ versions of the scale had a five-factor structure, the Italian version² had a four-factor structure. In this study, the scale was detected to have a four-factor structure, deviating from the original and Chinese versions but remaining consistent with the Italian version.^{2,18} The four factors that comprise NSPIC-Tr are “instills confidence through caring,” “supportive learning climate,” “control vs flexibility” and “respectful sharing.” The CFA supported the four-factor scale structure yielded by the EFA. The GFI indices were evaluated to assess whether the model built with CFA was fit for the data. This study’s findings indicate that NSPIC can be used in different cultures and intercultural comparisons.

TABLE 3 Test-retest analysis of NSPIC-Tr factors

Factors	Items	N	Test mean (SD)	Retest mean (SD)	r	P
Instills confidence through caring	12	30	58.13 (10.79)	59.07 (9.12)	.810	.000
Supportive learning climate	6	30	31.10 (4.64)	31.96 (5.18)	.719	.009
Control vs flexibility	7	30	34.36 (7.43)	34.93 (6.04)	.772	.000
Respectful sharing	5	30	24.10 (3.24)	24.23 (2.63)	.670	.592
NSPIC-Tr total	30	30	150.33 (21.02)	155.20 (20.73)	.762	.000

Note: NSPIC-Tr stands for Nursing Students' Perceptions of Instructor Caring-Turkish Version, a scale translated to Turkish that measures nursing students' perceptions of how clinical instructors show care and empathy for their students' learning processes. SD stands for standard deviation, *r* stands for item-total correlation, and *P* stands for the calculated probability.

4.2 | Reliability

NSPIC-Tr's reliability was assessed with Cronbach's alpha internal consistency coefficient, item-total correlation, and test-retest analysis. Cronbach's alpha coefficient for the total NSPIC-Tr was high, with a value of 0.94, suggesting high reliability. The Cronbach's alpha was 0.93 for factor 1, 0.83 for factor 2, 0.83 for factor 3, and 0.68 for factor 4. Internal consistency coefficients for the total NSPIC-Tr scale and for all subscales were deemed highly reliable, considering that the Cronbach's alpha internal consistency coefficient that is deemed adequate for a measurement instrument should be as close to 1 as possible.^{23,24} Cronbach's alpha was 0.97 in the original version, 0.93 in the Chinese version, and 0.94 in the Italian version. Findings from this study are similar with the available scale findings.^{2,14,18}

When the relationship between scores obtained from test-retest was examined to assess the time invariance of the scale, a positive, strong, and statistically highly significant relationship was observed between the scores of the two measurements taken with a 3-week interval. According to test-retest results in this study, the correlation values of factors 1, 2, and 3 indicated a high-level (0.70-1.00) relationship. Factor 4 showed a mid-level (0.30-0.70) relationship, and the time invariance of the entire scale was proven. These results are similar to test-retest results obtained from studies of other versions of the scale.^{2,18} The study also reveals that the scale's internal consistency is high for students, and reliable results can be attained in more than one application.

4.3 | Limitations of the study

Study results included undergraduates studying in the nursing department of a university in eastern Turkey. The results cannot be generalized to all nursing students in Turkey. Future studies should be conducted with students enrolled in various programs, such as postgraduate nursing programs, and with samples representing different geographical regions of Turkey. NSPIC-Tr could also be used to assess any differences in instructor caring perceived by students studying across a variety of nursing education programs.

5 | CONCLUSIONS

This study is the first study assessing the NSPIC scale's psychometric properties in Turkey. Findings are consistent with the results from

analyses of the original scale. EFA and CFA results confirmed the four-factor structure of the scale. Cronbach's alpha internal consistency coefficient, item-total correlation, test-retest analysis, and parallel forms reliability of the scale had high correlations. These results demonstrate that NSPIC-Tr is a valid and reliable instrument for nursing students. The scale may also help increase the caring interaction between instructor and student and the caring competence of students.

CONFLICT OF INTERESTS

There are no conflict of interests either financial or otherwise.

AUTHOR CONTRIBUTIONS

Study design: YDO; data collection: YDO and MD; data analysis: İB; study supervision: YDO and İB; manuscript writing: YDO, MD, ÖÇ, and İB; critical revisions for important intellectual content: YDO and ÖÇ.

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