

# Psychometric Assessment of the Nursing and Midwifery Students' Attitudes Towards Sexual Health Scale

## Hemşirelik ve Ebelik Öğrencilerinin Cinsel Sağlığa Yönelik Tutumları Ölçeğinin Psikometrik Değerlendirilmesi

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**ABSTRACT Objective:** This study was conducted for psychometric assessment of the nursing and midwifery students' attitudes towards sexual health (SA-SH) scale. **Material and Methods:** Methodological design was used in this research. The entire population of the study consisted of a total of 333 nursing and midwifery (188 and 145) students enrolled at the 3<sup>rd</sup> and 4<sup>th</sup> years of the Faculty of Health Sciences at Kahramanmaraş Sütçü İmam University in Turkey. No sample selection method was used in the study, and the entire population was aimed to be reached. The study was completed with a total of 280 students (174 nursing, 106 midwifery), and 84% of the entire population was reached. The sample size in the study was sufficient for factor analysis. The data were collected by using the descriptive questionnaire form and the SA-SH scale. **Results:** The SA-SH scale consists of 3 factors and 15 items. The Cronbach's alpha coefficient was calculated as 0.87. The Kaiser-Meyer-Olkin value was 0.88, and the Bartlett's test statistic was found as chi-square ( $\chi^2$ )=2546.409,  $p=0.000$ . The factor analysis revealed that the items were collected under 3 factors with eigenvalues of higher than 1, and these factors explained 67.1% of the total variance. **Conclusion:** With the validity and reliability study that was conducted, it was determined that the scale is suitable for nursing and midwifery students and a valid and reliable measurement instrument in assessing the attitudes of students towards sexual health. It is recommended to apply the scale with different groups of students and a larger sample.

**Keywords:** Sexual health scale; validity; reliability; nursing and midwife student

**ÖZET Amaç:** Bu araştırma, hemşirelik ve ebelik öğrencilerinin cinsel sağlığa yönelik tutumları ölçeğinin psikometrik değerlendirilmesi amacıyla yapıldı. **Gereç ve Yöntemler:** Araştırma, metodolojik türde yapıldı. Araştırmanın evrenini, Kahramanmaraş Sütçü İmam Üniversitesi Sağlık Bilimleri Fakültesi 3. ve 4. sınıfta eğitim gören toplam 333 hemşirelik ve ebelik (188 hemşirelik, 145 ebelik) öğrencileri oluşturdu. Araştırmada örneklem seçim yöntemi kullanılmamış ve evrenin tamamına ulaşılmaya çalışılmıştır. Araştırma, toplam 280 öğrenci (174 hemşirelik, 106 ebelik) ile tamamlanmış ve evrenin %84'üne ulaşılmıştır. Araştırmadaki örneklem büyüklüğü faktör analizi yapmak için yeterlidir. Veri toplama aracı olarak tanımlayıcı anket formu ve öğrencilerin cinsel sağlığa yönelik tutumları ölçeği kullanıldı. **Bulgular:** Ölçek, 3 faktörlü ve 15 sorudan oluşmaktadır. Cronbach alfa katsayısı 0,87 olarak saptandı. Kaiser-Meyer-Olkin değeri 0,88, Bartlett's testi ki-kare ( $\chi^2$ )=2546,409,  $p=0,000$  bulundu. Faktör analizinde öz değerinin 1'in üstünde olan 3 faktörde toplandığı ve toplam varyansın %67,1'ini oluşturduğu belirlendi. **Sonuç:** Yapılan geçerlik ve güvenilirlik çalışması ile ölçeğin, Türk toplumuna uygun ve öğrencilerin cinsel sağlığa yönelik tutumlarını değerlendirmede geçerli ve güvenilir bir ölçme aracı olduğu bulunmuştur. Ölçeğin, daha büyük örneklemle farklı grup öğrencilerde uygulanması önerilmektedir.

**Anahtar Kelimeler:** Cinsel sağlık ölçeği; geçerlik; güvenilirlik; hemşirelik ve ebelik öğrencisi

Sexual health is a significant part of general health and wellness. The World Health Organization (WHO) defines sexual health 'as a state of physical, emotional, mental and social well-being in relation to sexuality and not merely the absence of disease, dys-

function or infirmity'.<sup>1,2</sup> Healthcare professionals need to be capable, supportive and reassuring towards patient expectations regarding sexual health. Healthcare professionals and students studying health have the opinion that sexual health needs to be a part of

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the care and rehabilitation of patients, but it is included inadequately in their education, and they experience communication problems regarding sexual health issues.<sup>3</sup>

The reasons of healthcare professionals for avoiding communication with their patients about sexual health include embarrassment, personal disturbance. The knowledge levels and capacities of healthcare professionals in clinical practice and responding to patient needs are highly important.<sup>4</sup> Individuals' attitudes are important because they affect the importance and value given to sexual health. There is a conservative attitude in Turkish society related to sexuality and sexual health. In the society, sexuality may be still described by expressions such as "hidden, shameful, forbidden" and seen as a taboo. Due to this traditional approach in the society, individuals, especially the youth cannot access sufficient and accurate information related to sexuality, sexual health and reproductive health.<sup>5</sup> Gender of patients, age of patients, personal values and experiences affect the attitude of students towards sexual topics. As negative attitudes may prevent effective sexual health counselling.<sup>6</sup> In the study, it was determined that constructive and positive education received by students of health departments in their education processes affects their points of view, attitudes and behaviors towards sexuality.<sup>7</sup>

As a result of the literature review, no Turkish validity and reliability study that measured the attitudes of students towards sexual health could be encountered. Providing accurate and reliable information in terms of sexual health, which constitutes a significant step of general health, carries great importance for healthcare professionals.

Due to its social and cultural structure, Turkish society is one of the societies where sexuality is perceived as a taboo and not clearly expressed. Although individuals have different educational or cultural levels, this traditional attitude may be maintained. It is important for healthcare professionals to provide holistic care without reflecting the cultural and moral values of the society into their professional practices.<sup>8</sup> Attitudes, behaviors and perceptions towards sexual health would differ from society to society, it is

needed for every society to have its own measurement instrument. In the study, whose validity and reliability were conducted in Swedish social work students, the scale was found to be reliable in measuring attitudes towards sexual health.<sup>2</sup> It is believed that this methodological study is significant in terms of reflecting the attitudes of students receiving education in Turkish culture towards sexual health and being able to compare them to students in other countries where attitudes towards sexual health are determined.

**Research Question 1:** Is this scale valid and reliable for nursing and midwife students?

**Research Question 2:** As a result of the confirmatory factor analysis, are the data of the sample compatible with the original factor structure?

## MATERIAL AND METHODS

### DESIGN AND SAMPLE

This is a methodological study. The study was carried out in the period of September-October 2019 with nursing and midwifery students enrolled at the Faculty of Health Sciences at Kahramanmaraş Sütçü İmam University. The entire population of the study consisted of a total of 333 nursing and midwifery (188 and 145) students enrolled at the 3<sup>rd</sup> and 4<sup>th</sup> years of the faculty. No sample selection method was used in the study, and the entire population was aimed to be reached. The study was completed with a total of 280 students (174 nursing, 106 midwifery), and 84% of the population was reached. In scale studies, it is recommended to reach a sample that is 5-10 times as large as the number of items in the scale.<sup>9</sup> The sample size in the study was sufficient for factor analysis.

### DATA COLLECTION

The data were collected by using the descriptive questionnaire form and the Students' Attitudes toward Addressing Sexual Health Scale (SA-SH).

### DESCRIPTIVE QUESTIONNAIRE FORM

The form consisted of 6 questions (age, gender, department, year of education, status of taking sexual health course, status of sexual health being mentioned in classes).

## STUDENTS' ATTITUDES TOWARDS SEXUAL HEALTH SCALE

It was developed in 2016 by Areskoug-Josefsson et al. The scale measures the attitudes of students towards sexual health while practicing their profession.<sup>4</sup> The original scale consists of 22 items. The Cronbach's alpha was calculated as 0.61.

The Turkish version is structured with 15 items containing both positive and negative attitudes. It is a 5-point Likert-type (1=disagree, 5=absolutely agree) scale where the last seven items are inversely scored. The scale consists of a total of 3 dimensions as "present feelings of comfortableness", "future working environment" and "fear of negative effect on future patient relationships". The score is calculated by adding the scores of the items, while a higher score shows that the positive attitudes of students towards sexual health while practicing their profession in the future increase.

## VALIDITY AND RELIABILITY OF THE STUDENTS' ATTITUDES TOWARDS SEXUAL HEALTH SCALE

The validity and reliability of the SA-SH were tested based on the relevant literature and opinions of experts for language validity.<sup>2,4</sup>

## LINGUISTIC VALIDITY

It is inevitable for the validity study of scales in another language to reflect the culture in the target language. Three experts independently translated the scale from English into Turkish. The researchers assessed the translations regarding their suitability for Turkish and comprehensibility. The scale was then translated back into English by a linguist expert. This translation was compared with the original version of the scale by the researchers, it was ensured to be suitable and comprehensible, and the Turkish version was established.

## INTERNAL CONSISTENCY

Reliability is what determines whether or not all aspects of a scale has the capacity of measurement. For the internal consistency of a scale, it is needed to prove that all dimensions of the scale measure the same characteristic.<sup>10</sup> The internal consistency of the scale was determined by using Cronbach's alpha,

item-total correlation and factor analyses. The Cronbach's alpha is used to determine the internal consistency of Likert-type scales. Coefficients in the range of  $0.60 \leq \alpha < 0.80$  show that the scale is reliable, while reliability increases, and it is understood that the items in the scale are consistent with each other and measure the same characteristic when the coefficient gets closer to 1. If the item-total correlation of an item is low, this shows that the item measures a different characteristic than the other items in the test. In general, it is accepted that items with item-total correlations of higher than 0.30 are suitable, while those in the range of 0.20-0.30 may be included in the test if decided so.<sup>11,12</sup>

## DATA ANALYSIS

The data were analyzed using the SPSS 22.0 package software. Frequencies, percentages, means and standard deviations were used in the statistical analyses.

Exploratory factor analysis and confirmatory factor analysis were carried out to assess the construct validity of the scale. Before factor analysis, to test the suitability of the sample size of the scale and the correlation among the items, Kaiser-Meyer-Olkin (KMO) and Bartlett's tests were conducted.

## ETHICAL CONSIDERATIONS

For adaptation of the scale into Turkish, permission was received from Kristina Areskoug-Josefsson via e-mail. Written approval was received from the Clinical Studies Ethics Board of Kahramanmaraş University Medical Faculty (21.08.2019, Decision No: 03). The study was conducted by following the principles of the Declaration of Helsinki.

## RESULTS

Of the students, 80.4% were women, 62.1% were nursing students, 51.1% were 3<sup>rd</sup>-year students, 88.2% had taken a sexual health course, sexual health was mentioned in the classes of 67.1%, and the mean age of them was  $21.53 \pm 1.90$  (Table 1).

The KMO value was 0.88, and the Bartlett's test statistic was found as chi-square ( $\chi^2$ )=2546.409,  $p=0.000$ . After determining suitability for factor analysis, the dimensions of the scale were determined by

**TABLE 1:** The distribution of socio-demographic characteristics of students (n=280).

| Characteristics                                 | n          | %    |
|---|------------|------|
| <b>Gender</b>                                   |            |      |
| Female  | 225        | 80.4 |
| Male  | 55         | 16.6 |
| <b>Department</b>                               |            |      |
| Nursing   | 174        | 62.1 |
| Midwifery                                       | 106        | 37.9 |
| <b>Class</b>                                    |            |      |
| 3. class  | 143        | 51.1 |
| 4. class  | 137        | 48.9 |
| <b>Taking sexual health lessons</b>             |            |      |
| Yes   | 247        | 88.2 |
| No  | 33         | 11.8 |
| <b>Sexual health was mentioned in education</b> |            |      |
| Yes   | 188        | 67.1 |
| No  | 24         | 8.6  |
| Unstable  | 68         | 24.3 |
| <b>X±SD</b>                                     |            |      |
| <b>Age</b>                                      | 21.53±1.90 |      |

SD: Standard deviation.

principal component analysis with varimax rotation. At the first stage, the scale was gathered under 5 factors with eigenvalues of  $\geq 1$ . The items 9, 15, 21 were removed as they were overlapped, while the item 14 was removed as its factor load was  $< 0.50$ . These explained 54.7% of the total variance. In the next analysis with the same method, the item 19 was removed due to the factor load of  $< 0.40$ , these explained 61.5% of the total variance, and 4 factors were found. At the third stage, the items 20 and 22 were removed due to the same reason, the explained variance was found as 63.4%, and there were 4 factors. At the final stage, a scale adapted into Turkish culture with 3 factors as in the original version with a factor load of  $\geq 0.50$  in each item and no overlapped items was obtained.

Based on the exploratory factor analysis, the scale consisted of 3 dimensions (Existing Comfort Feelings, Future Working Environment, Fear of Negative Effect on Future Patient Relationships) and 15 items (of which 7 are inversely scored). Total scores of the scale was determined minimum 15 maximum 75.

Table 2 shows the validity and reliability analysis results. It was determined that the mean scores of

the scale were in the range of 2.75-3.60, corrected item-total correlations were in the range of 0.29-0.73, factor loads were in the range of 0.64-0.89, and Cronbach's alpha was in the range of 0.72-0.94. The total scale's Cronbach's alpha was found as 0.87, its mean score was 45.4, and its factors explained 67.1% of the total variance.

Table 3 shows the results of the confirmatory factor analysis. It was determined that the obtained factor loads were between 0.64 and 0.89, the chi square ( $\chi^2$ ) value was 164.021, and other fit index values were as root mean square error of approximation (RMSEA): 0.059, standardized root-mean-square residual (SRMR): 0.068, comparative fit index (CFI): 0.968, goodness of fit index (GFI): 0.930 and non-normed fit index (NNFI): 0.959. The dimensions of the scale are shown with a PATH diagram (Figure 1). In summary, according to the fit indices of the confirmatory factor analysis, the scale was the most suitable for a 3-factor structure. The Turkish version of the scale consisted of 15 items and 3 dimensions.

## DISCUSSION

Since the WHO defined sexual health and the necessity of providing healthcare professionals with relevant training, sexual health has been accepted as an important part of patient care. It is of great importance that the students studying in the field of health have a good education about sexual health and they can inform the individuals they care for when they work as health professionals. However, healthcare professionals rarely discuss sexual health topics.<sup>13</sup> For sexuality to be healthy, individuals need to have accurate and sufficient knowledge on sexual health. Healthcare personnel have important duties to those who receive their services regarding providing them with positive attitudes and behaviors regarding sexual health and helping them effectively cope with their existing sexual health problems.<sup>14</sup> It is believed that healthcare professionals' development of positive attitudes towards sexual health will make it easier for them to integrate sexual health in patient care in the future. Discussion of sexual health topics in patient care carries great importance in holistic care.

**TABLE 2:** Principal component analysis followed by varimax rotation factor loadings and item-total correlations of items of the scale (n=280).

| Scale items   | Mean (SD)           | Corrected item-<br>total correlation | Cronbach's alpha if<br>item deleted | Factor loading | Alpha        | Variance     |
|---|---------------------|--------------------------------------|-------------------------------------|----------------|--------------|--------------|
| <b>Present feelings of comfortableness</b>  | <b>25.76 (7.52)</b> |                                      |                                     |                | <b>0.943</b> | <b>40.78</b> |
| 1. I feel comfortable in providing the patient with information on sexual health in the future  | 3.34 (1.05)         | 0.607                                | 0.862                               | 0.773          |              |              |
| 2. I feel comfortable in talking to the patient about sexual health in the future   | 3.40 (1.08)         | 0.680                                | 0.858                               | 0.848          |              |              |
| 3. I feel comfortable in discussing the sexual health with the patient in the future  | 3.30 (1.11)         | 0.738                                | 0.855                               | 0.890          |              |              |
| 4. Whatever the patient's sex is, I feel comfortable in discussing the sexual health topics with the patient in the future                  | 3.02 (1.18)         | 0.702                                | 0.856                               | 0.851          |              |              |
| 5. No matter how old the patient is, I feel comfortable in discussing the sexual health problems with the patient in the future             | 3.18 (1.14)         | 0.691                                | 0.857                               | 0.883          |              |              |
| 6. Whatever the patient's cultural background is, I feel comfortable in discussing the sexual health topics with the patient in the future  | 3.21 (1.07)         | 0.659                                | 0.859                               | 0.843          |              |              |
| 7. Whatever the patient's sexual orientation is, I feel comfortable in discussing the sexual health problems with the patient in the future | 3.23 (1.10)         | 0.683                                | 0.858                               | 0.861          |              |              |
| 8. I feel comfortable in discussing with the patient about his/her private sexual activities in the future                                  | 3.04 (1.11)         | 0.608                                | 0.861                               | 0.758          |              |              |
| <b>Future working environment</b>   | <b>10.21 (2.93)</b> |                                      |                                     |                | <b>0.766</b> | <b>18.17</b> |
| 16. I am afraid that my co-workers will be disturbed by my talks to my patient about sexual topics in the future.*                          | 3.47 (1.17)         | 0.376                                | 0.872                               | 0.793          |              |              |
| 17. I am afraid that my co-workers will feel disturbed by patient's sexual health problems in the future*                                   | 3.46 (1.16)         | 0.282                                | 0.877                               | 0.886          |              |              |
| 18. I think that my colleagues will be reluctant to talk about sexual issues in the future*   | 3.27 (1.21)         | 0.298                                | 0.876                               | 0.726          |              |              |
| <b>Fear of negative effect on future patient relationships</b>  | <b>9.43 (2.68)</b>  |                                      |                                     |                | <b>0.723</b> | <b>8.17</b>  |
| 10. I think that I will feel embarrassed if the patient talks to me about sexual issues in the future*                                      | 3.85 (1.19)         | 0.465                                | 0.868                               | 0.675          |              |              |
| 11. I think that the patient will feel embarrassed if I talk about sexual issues in the future*   | 2.75 (1.09)         | 0.323                                | 0.874                               | 0.676          |              |              |
| 12. I am afraid that the patient will be disturbed if I talk about sexual issues in the future*   | 3.07 (1.11)         | 0.382                                | 0.872                               | 0.835          |              |              |
| 13. I am afraid that conversations regarding sexual health might create a distance between me and the patients*                             | 3.60 (1.22)         | 0.429                                | 0.870                               | 0.647          |              |              |
| <b>Total</b>  | <b>45.41 (9.65)</b> |                                      |                                     |                | <b>0.873</b> | <b>67.13</b> |

\*Substances to be reversed; SD: Standard deviation.

**TABLE 3:** Confirmatory factor analysis results fit values.

| Fit index | Results |
|-----------|---------|
| $\chi^2$  | 164.021 |
| df        | 83      |
| RMSEA*    | 0.059   |
| SRMR*     | 0.068   |
| CFI**     | 0.968   |
| GFI**     | 0.930   |
| NNFI**    | 0.959   |

$\chi^2$ : Chi-square; RMSEA: Root mean square error of approximation; SRMR: Standardized root-mean-square residual; CFI: Comparative fit index; GFI: Goodness of fit index; NNFI: Non-normed fit index; df: degrees of freedom; \* $<0.08$ ; \*\* $>0.90$ .

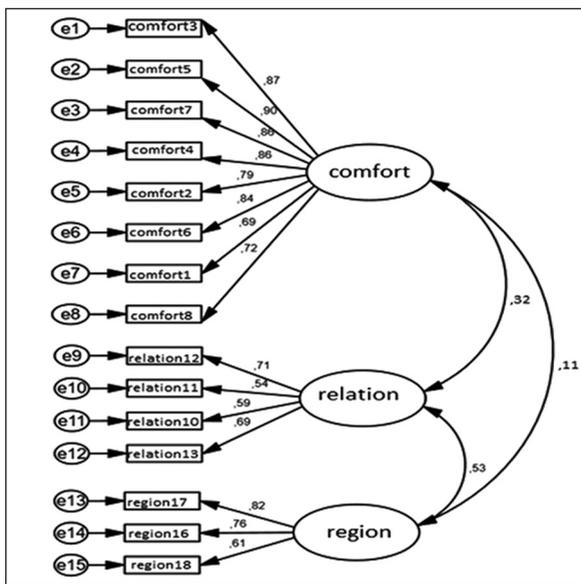


FIGURE 1: Path diagram.

A study determined that constructive and positive education on sexual health received by health students affected their points of view, attitudes and behaviors towards sexuality positively.<sup>15</sup>

The sentences in the scale and the relationships among them were carefully assessed by researchers who are experts in their field, and as a result of the analyses that were carried out, it was decided to collect the Turkish translation of the scale under 15 items.

The item-total correlations of the items in the scale were found to be in the range of 0.28-0.73. In the literature, item-total correlations were catego-

rized as very suitable item for coefficients of  $\geq 0.40$ , suitable item for 0.30-0.39, item that may be included in the test when necessary or after correction for 0.20-0.29 and unsuitable item for  $\leq 0.19$ .<sup>16</sup> Based on these values, it may be stated that the scale was reliable. The KMO test result was found as 0.88. It is accepted that KMO values of 0.50-0.60 are bad, 0.60-0.70 are weak, 0.70-0.80 are moderate, 0.80-0.90 are good, and higher than 0.90 are very good.<sup>17</sup> The Bartlett's test result of the scale ( $\chi^2=2546.409$ ,  $p=0.000$ ) was significant, and the data were normally distributed. According to these results, the sample had a sufficient size and reliability for factor analysis. As a result of the exploratory factor analysis, a 3-factor structure with eigenvalues of higher than 1 was obtained, and 67.13% of the total variance was explained. The original scale was collected under 3 factors and 22 items, and the explained rates of variance were 37% for Factor 1, 11% for Factor 2 and 8% for Factor 3.<sup>4</sup> In studies in the social sciences, it is considered sufficient that the rate of the explained variance is between 40% and 60%.<sup>18</sup> In this study, it was determined that a sufficient rate of the total variance was explained. The items (9, 14, 15, 19, 20, 21, 22) were removed. As these statements had close meanings to those in other items of the scale in Turkish culture, this might have led them to have low item load values.

The total scale Cronbach's alpha was found as 0.87, while those of the dimensions were respectively 0.94, 0.76 and 0.72. In the literature, Cronbach's alpha values of 0.61-0.80 indicate moderate reliability, while those in the range of 0.81-1.00 indicate high reliability. For SA-SH, Areskoug-Josefsson et al. found the Cronbach's alpha coefficient as 0.61.<sup>4</sup> In line with the literature, when the Turkish SA-SH scale is compared to the original scale, it may be stated that it is similar to the original scale, and it has a very high reliability.<sup>19</sup>

In order to test the construct validity of the scale, a confirmatory factor analysis was carried out, and fit indices were determined. There results were as  $\chi^2/df$ : 1.97, CFI: 0.968, GFI: 0.930, RMSEA: 0.059, SRMR: 0.068. If the value obtained by dividing the  $\chi^2$  value by the degrees of freedom is 2 or below, this

shows that the model is a good model.<sup>10,20</sup> It was determined that the scale satisfied a good fit criterion. Studies in the literature stated that GFI, CFI and NNFI values need to be higher than 0.90, while RMSEA and SRMR should be smaller than 0.08.<sup>21-23</sup> It was found based on the fit indices given in the literature that the measurement model was confirmed, and it satisfied acceptable fit criteria.

## CONCLUSION

According to the findings of this study, the SA-SH scale was valid and reliable for nursing and midwife students. The consistency of SA-SH was sufficient. It is recommended to use the scale for the purpose of determining the attitudes of students towards sexual health.

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During this study, no financial or spiritual support was received neither from any pharmaceutical company that has a direct connection with the research subject, nor from a company that provides or produces medical instruments and materials which may negatively affect the evaluation process of this study.

## Conflict of Interest

No conflicts of interest between the authors and / or family members of the scientific and medical committee members or members of the potential conflicts of interest, counseling, expertise, working conditions, share holding and similar situations in any firm.

## Authorship Contributions

**Idea/Concept:** Kevser Işık; **Design:** Kevser Işık, Hilal Yıldırım; **Control/Supervision:** Kevser Işık, Hilal Yıldırım; **Data Collection and/or Processing:** Kevser Işık, Hilal Yıldırım; **Analysis and/or Interpretation:** Hilal Yıldırım; **Literature Review:** Kevser Işık; **Writing the Article:** Kevser Işık, Hilal Yıldırım; **Critical Review:** Kevser Işık, Hilal Yıldırım; **References and Fundings:** Kevser Işık, Hilal Yıldırım; **Materials:** Kevser Işık, Hilal Yıldırım.

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