JERN Journal of Education and Research in Nursing

Original Article
DOI:10.5152/jern.2022.36675

Health Anxiety Level and Health-Promoting and Protective Behaviors of Nursing Students

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Abstract

Background: Many situations in the life of the individual can affect health negatively, causing the individual to experience anxiety. Nurses need to be role models in order to inform and guide individuals about healthy behaviors.

Aim: The study was conducted to determine the health anxiety level of nursing students and their health-promoting and protective behaviors.

Methods: The research is descriptive and relation-seeking type. The sample consisted of 933 students in the nursing department of a university who agreed to participate in the study. Data were collected using face-to-face personal information form, Health Promotion and Protection Behaviors Scale and Health Anxiety Scale in the classroom environment. Data were analyzed with Mann–Whitney *U*, Kruskal–Wallis test, and Spearman correlation analysis.

Results: The mean age of the students is 20.80 ± 1.59 years. The mean score of the students' Health Anxiety is 18.32 ± 6.48, and the mean score of Health Promotive and Protective Behaviors Scale was 80.91 ± 10.36. Physical, psychosocial, and protection subscale mean scores are 3.13 ± 0.47, 3.47 ± 0.55, and 3.47 ± 0.55, respectively. There is a negative and weak level (r=−0.127; *P*=.001) correlation coefficient between the variables, which is statistically significant (*P* < .05).

Conclusion: The students' health anxiety is at a low level, and their health-promoting and protective behaviors are at a moderate level. However, the students with low health anxiety have higher health-promoting and protective behaviors. It is recommended to give seminars and trainings in order for nursing students to understand the importance of health protective and improving behaviors, to transform this knowledge into behavior and to be a role model for the society.

Keywords: Nursing student, health anxiety, health-promoting and protective behaviors

Introduction

Health has an important place in people's lives and is defined as a person's physical, mental, and social well-being in full harmony with the individual.[1] Many situations that an individual experiences in his life can negatively affect health and cause an individual to experience anxiety. Health anxiety includes anxiety about a person's health or that they may have a serious illness.[2,3] Health anxiety can affect an individual's health both positively and negatively. In addition to the fact that the person does not want to take protective and improving behaviors due to this anxiety, this anxiety, which is felt at a moderate level, can help the person to protect his/her health and take precautions or avoid dangerous situations for health.[4] For this reason, it is important to determine the health anxiety level of the individual and to establish health-promoting and protective behaviors.

While the concept of health protection and development refers to increasing and improving the current health level of the individual, it includes avoiding diseases and taking the necessary measures for this avoidance.[5] Due to their professional responsibilities and social roles, health professionals have the feature of being role models with their lifestyles and influencing the group they serve in terms of health education.[6] Therefore, nurses have great responsibilities in health promotion activities. By determining the prevalence of habits that may negatively affect health, nurses should raise awareness of healthy living in society and replace negative behaviors with positive behaviors

Cite this article as: Yıldız E, Çevik BE, Güler N. Health anxiety level and health-promoting and protective behaviors of nursing students. *J Educ Res Nurs.* 2022;19(4):422-428.

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Received: June 28, 2020
Accepted: April 2, 2021
Publication Date: December 1, 2022

necessary for health. For nurses to inform and guide individuals about healthy behaviors, they should also display healthy behaviors and be role models who have developed their own beliefs, attitudes, and approaches.[6,7] For this reason, nurses should understand the importance of protecting and improving health and exhibit motivation-enhancing behaviors for individuals in society to develop positive health behaviors.[8] These behaviors are generally acquired during university education. Nursing students are expected to understand the importance of improving their health from their student years and to be a model for society with their behaviors. In studies examining the status of nursing students to have taken a course on health-protective and improving behaviors during their university education,[9-10] it was found that students who took this course adopted healthy lifestyle behaviors at a high rate.

As indicated at the level of mild health anxiety, individuals engage in health-protective behaviors and avoid situations dangerous to their health. This increases the level of healthy lifestyle behavior. Therefore, in this study, students' healthy lifestyle behavior characteristics and health anxiety levels were discussed together. No study has been found in the literature to determine the health anxiety level and health-promoting and protective behaviors of nursing students. This study was conducted to determine the health anxiety level and health-promoting and protective behaviors of nursing students.

Research Questions

- What is the health anxiety level of nursing students?
- What are the levels of health-promoting and protective behaviors of nursing students?
- Is there a relationship between the health anxiety level of nursing students and their health-promoting and protective behaviors?

Methods

Type of Research

The research is descriptive and relation-seeking type.

Population and Sample

The population of the research consisted of 1276 students, including the students of the Faculty of Health Sciences Nursing Department (n=722) and the School of Health Nursing Department (n=554) of a public university. The participation rate of the students in the study was determined as 77%, and the sample consisted of 933 students.

Exclusion Criteria of the Study

Students who were absent at the time of data collection and did not want to participate in the study were not included in the study.

Data Collection Tools

The data were obtained by using the personal information form prepared by the researchers in line with the literature,[11-12] the Health Anxiety Scale, and the Health-Promoting and Protective Behaviors Scale.

Personal Information Form

The personal information form consisted of 8 questions in total, including questions about the student's age, gender, class, marital status, economic level, place of residence, presence of any chronic disease, and smoking habits.

Health Promotion and Protective Behaviors Scale

The Health Promotion and Protective Behaviors (HPPB) Scale was developed by Bostan et al.[13] The Cronbach's alpha coefficient of the scale was found to be between 0.61 and 0.76 for the subdimensions and 0.83 for the overall scale. The scale consists of 3 subdimensions, such as physical, psychosocial, and protection, and 24 items. Health Promotion and Protective Behaviors Scale, in terms of physical dimension, the person's regular exercise behaviors and behaviors related to meeting physiological needs such as eating and drinking; in terms of the psychosocial dimension, the behavior of the individual such as devoting time to himself and his environment; and in terms of the protection dimension, the behaviors that the person should do to protect their health in the current situation. The scale, designed in a 5-point Likert type, was scored as "Never: 1," "Very rarely: 2," "Sometimes: 3," "Mostly: 4," and "Always: 5." The minimum score that can be obtained from the scale is 24, and the maximum score is 120. It may be thought that the person with a low score on the scale does not display health-promoting behaviors (such as exercising regularly, meeting physiological needs such as eating and drinking, and allocating time for himself and his environment) and protective behaviors. In this study, Cronbach's alpha coefficient was determined as 0.79.

Health Anxiety Scale

Health Anxiety Scale (HAC) was developed by Salkovskis et al to evaluate the health anxiety of individuals. The Turkish validity and reliability study of the scale was conducted by Aydemir et al.[14] According to the reliability analysis of HAC, Cronbach's alpha internal consistency coefficient was obtained as 0.91. Health Anxiety Scale is a self-report scale consisting of 18 items. The 14 items of the scale consist of statements containing quartet answers questioning the mental status of the patients. In the remaining 4 questions, the patients are asked to speculate on what their mental state might be like under the assumption of a serious illness. The items assess anxiety about health, awareness of bodily sensations and changes, and anxious consequences about getting sick in a multiple-choice format. The scoring of the scale is between 0 and 3 for each item. The highest 54 points can be obtained from the scale. High scores obtained from the scale provide data on the level of an individual's health concerns. In this study, Cronbach's alpha coefficient was found to be 0.81.

Data Collection

The questionnaire forms used to obtain the data were applied in the classroom environment between January 6 and March 8, 2020, before the start of the course, with the permission of the responsible lecturer of the course. After the students participating in the research were informed about the study and their verbal permissions were obtained, the forms were applied face-to-face. It was stated to the students that the decision about whether or not to participate in the research was entirely their own, that they should not write their names on the questionnaire, that the data to be collected from this study would only be used within the scope of the research, and that confidentiality would be strictly ensured. Data collection took an average of 10 minutes.

Ethical Dimension of Research

Before the study was conducted, Ethics Committee Approval (Decision no: 2019-05/32, Date: May 22, 2019) was obtained from the Ethics Committee of Sivas Cumhuriyet University Non-interventional Ethics Committee and written permission was obtained from the institutions where the study would be conducted. Since the scales

were published, no separate permission was obtained from the scale authors. Written and verbal consent were obtained from the students.

Evaluation of Data

The data obtained from the research were evaluated using the statistical package program Statistical Package for the Social Science, Version 23.0 (IBM SPSS Corp.; Armonk, NY, USA). In the evaluation of the data, the data about introductory characteristics of the students were evaluated by number, percentage, and mean. Students' HAC and HPPB scale scores are shown as mean, standard deviation, median, minimum, and maximum. When comparing the demographic characteristics of the students and the total and subdimension mean scores of HAC and HPPB, the Mann–Whitney U-test was used in 2 groups that did not show normal distribution, and in groups with more than 2, evaluation was made using the Kruskal–Wallis test. The relationship between HPPB and HAC was evaluated by Spearman correlation analysis. In statistical analysis, the $P < .05$ level was accepted as statistically significant.

Results

Table 1 shows the sociodemographic characteristics of the students. The mean age of the students is 20.80 ± 1.59 years, 74.1% are female, 98.7% are single, 78.9% are middle class, 77.8% are living in dormitories, 6% have chronic diseases, and 22.2% are smoking used has been determined.

When Table 2 is examined, the HPPB mean score of the students was found to be 80.91 ± 10.36. Physical, psychosocial, and protection subdimension mean scores were determined as 3.13 ± 0.47, 3.47 ± 0.55, and 3.47 ± 0.55, respectively. The HAC mean score of the students was determined as 18.32 ± 6.48.

Table 3 shows the distribution of subscores and total mean score of HAC and HPPB according to the sociodemographic characteristics of the students. There was a statistically significant difference between students' class, gender, economic status, place of residence, smoking status, and total mean scores of HAC and HPPB ($P < .05$).

Fourth-grade students had higher HAC scores than other classes, female students compared to male students, and students with low economic status compared to middle and high students ($P < .05$). It was found that the HAC mean score of the students living alone was statistically significantly higher than the students living in other places, the students with a chronic disease compared to the students without chronic disease, and the students who smoked compared to the nonsmokers ($P < .05$).

It was found that fourth-grade students had higher scores than other classes, female students compared to male students, and students with good economic status compared to middle and low students on HPPB total and subscore scales. Again, the scores of the students staying with their families from the HPPB total and subscore scales were higher than the students living in other places and the nonsmoking students were found to be statistically significant ($P < .05$).

A negative and weak correlation coefficient ($r = -0.127$; $P = .001$) was found between HAC and HPPB correlation, and this correlation was found to be statistically significant ($P < .05$).

Table 1. Distribution of Demographic Characteristics of Students (N = 993)

Demographic Characteristics	
Average age	X ± SS: 20.80 ± 1.59, Min-Max: 18-28
Grade	n (%)
1	257 (25.8)
2	242 (24.4)
3	252 (25.4)
4	242 (24.4)
Gender	
Female	**736 (74.1)**
Male	257 (25.9)
Marital status	
Single	980 (98.7)
Married	13 (1.3)
Economic situation	
Income less than expenses	93 (9.4)
Income equals expense	783 (78.9)
Income higher than expenses	117 (11.7)
Where does she/he lives	
Dormitory	773 (77.8)
At home with friends	63 (6.4)
At home with family	149 (15.0)
Alone	8 (0.8)
Presence of chronic disease	
Yes	60 (6.0)
No	933 (94.0)
Smoking status	
Yes	220 (22.2)
No	773 (77.8)

Discussion

The use of health-promoting behaviors is essential in the prevention of diseases, early diagnosis, and maintenance of health.[15] In the study, it was determined that the HPPB mean score of nursing students was 80.91 ± 10.36, and their health-promoting and protective behaviors were moderate. Studies to determine healthy behavior patterns with students studying in the field of health support our research results.[15-22] In other words, in the studies conducted using the Healthy Lifestyle Behavior Scale II, Genc et al[15] found the mean score of the students as 121.67 ± 20.18, Ozcan and Bozhuyuk,[16] 124.30 ± 17.92, and Mak et al[20] 128.23 ± 17.37, which stated that healthy lifestyle behaviors are at a moderate level. This can be explained by the fact that university life is a period when students' health-promoting

Table 2. Distribution of Students' Health Anxiety Scale and Health-Promoting and Protective Behaviors Scale Subdimensions and Scale Total Mean Scores

Scale Name	X̄ ± SS	M (Min-Max)
HPPB total score	80.91 ± 10.36	80 (53-114)
HPPB subdimensions		
Physical subdimension	3.13 ± 0.47	3.1 (1.80-4.70)
Psychosocial subdimension	3.47 ± 0.55	3.5 (1.67-5.00)
Protection subdimension	3.47 ± 0.55	3.6 (1.88-5.00)
HAC total score	18.32 ± 6.48	18 (0-51)

HAC, Health Anxiety Scale; HPPB, Health Promotion and Protective Behaviors Scale; M, median.
*Min-Max values that can be taken from the scale.

and protective behaviors are significantly affected, the importance of health-promoting and protective behaviors in the family and school environment is not sufficiently gained, or health protection and development issues are not sufficiently included in school curriculum.

According to the results of this study, the physical health promotion dimension with the lowest mean score in the health-promoting and protective scale subdimension was determined. This dimension includes concepts such as exercise, nutrition, and self-care and expresses the individual's ability to fully fulfill basic human needs. Similarly, in international[17,19,20] and national[16,23-25] studies on nursing students, physical activity was determined as the lowest mean score among healthy lifestyle behaviors. If regular nutrition and physical activity are considered the most important components of a healthy life, it is thought that the share of the physical dimension in health promotion is large, but the nursing students within the scope of our study cannot reflect their knowledge and experience in this dimension to their lifestyles at the desired level.

According to the results of this study, it is seen that as the socioeconomic level of nursing students increases, their health-promoting and protective behaviors also increase significantly. Genc et al[15] and Cinar et al[25] found that students with good socioeconomic status adopted healthy lifestyle behaviors. It can be said that the high socioeconomic level will also improve living conditions, thus positively affecting health-promoting and protective behaviors.

In the study, it was found that female students had significantly higher health-promoting and protective behaviors than male students. Contrary to this study, no significant difference was found between healthy lifestyle behaviors of students according to gender in other studies.[17,19,25,26] In this study, it is thought that the reason why the health-promoting and protective behaviors of female students are higher is due to the role of women in our traditional culture and the necessity of this role, that they have a more protective attitude towards their health and the health of those around them, and that women give more importance to esthetics, beauty, and health.

In the study, it was found that the health-promoting and protective behaviors of the students living in the dormitory or at home with their friends were significantly lower than the students staying with their families. Similarly, in the study conducted by Aksoy and Ucar[12] with nursing students, it was determined that the healthy lifestyle behaviors of the students staying in the dormitory or at home were lower. This can be explained by the fact that many students begin to live separately from their families in university life, meet many basic needs most of the time alone, and therefore have difficulty in maintaining healthy protective and improving behaviors.

In this study, it was seen that the health-promoting and protective behaviors of the senior students were significantly higher than the students studying in other classes. Other studies have supported our results.[15,27] In the study of Tambag,[8] healthy lifestyle behaviors of the students studying in the second and fourth grades were found to be statistically high. Ayaz et al[9] and Polat et al[28] stated that it was statistically high between the third and fourth grades. Karadeniz et al[29] found that there was no statistically significant difference between the healthy lifestyle behaviors of the students according to the grades, but the mean scores of the students increased as the grades increased. Ceylantekin and Ocalan[21] stated in their study that there was no significant difference in healthy lifestyle behaviors of students according to grades. In our study, it can be explained by the fact that as the grade levels of the students increase, they understand the importance of health and feel more responsible. It is thought that especially in the last year students have completed all their courses, reflecting the education they received on health-promoting and protective behaviors over time, and their health behaviors have changed positively.

In this study, the health-promoting and protective behaviors of non-smokers were found to be significantly higher than smokers. Vural and Bakir,[11] Ozcan and Bozhuyuk,[16] and Cihangiroglu and Deveci[30] found healthy lifestyle behaviors of nonsmokers to be higher in support of their study findings. Contrary to the results, Karadeniz et al[29] found no significant difference between healthy lifestyle behaviors and smoking habits of university students in their study. Smoking is one of the factors that negatively affect the health-promoting and protective behavior of individuals.[16] For this reason, it is thought that it is very important for nursing educators to counsel students to raise awareness about negative coping behaviors and to gain positive coping behaviors so that students do not smoke and quit if they do.

The transition period to university life, where physiological and psychosocial changes are experienced, can cause health anxiety in young people. Health anxiety is a negative interpretation of normal bodily sensations despite the absence of a physical disorder. In the study, the HAC mean score of the students was determined as 18.32 ± 6.48 and the students' health anxiety was found to be at a low level. Some studies to determine health anxiety among university students support our results.[31-34] Contrary to our study, there are also studies in the literature in which health anxiety is found to be moderate or high.[2,36]

In the study, the HAC mean score of the fourth-year students was higher than the other classes, female students compared to male students, students with low economic status compared to middle and high students, students with chronic diseases compared to students without chronic diseases, and smokers compared to nonsmokers students were found to have higher HAC scores conditions were found to be statistically significant. Akkuzu[36] found the health anxiety score of students with chronic diseases to be high as a result similar to this study; Karacadir and Celik[33] and Chen et al[37] found a significant difference between the level of health anxiety and gender in their study, and health anxiety was found to be higher in those who were female. It is thought that students whose economic situation is not

JERN 2022; 19(4): 422-428
DOI:10.5152/jern.2022.36675

Table 3. Comparison of Students' Demographic Characteristics, Health Anxiety Scale and Health Promotion and Protective Behaviors Scale's Total and Subdimensions Mean Scores

Demographic Characteristics	HPPB Total	Physical Subdimension	Psychosocial Subdimension	Protection Subdimension	HAC Total
	M (Min-Max)	M (Min-Max)	M (Min-Max)	M (Min-Max)	M (Min-Max)
Grade					
1 (n=257)	79 (57-111)	3.10 (1.80-4.40)	3.33 (1.67-5.00)	3.50 (2.25-5.00)	18 (0-51)
2 (n=242)	80 (53-114)	3.10 (1.90-4.60)	3.50 (1.83-5.00)	3.62 (2.13-5.00)	19 (4-47)
3 (n=252)	79 (56-111)	3.10 (1.90-4.70)	3.50 (2.17-5.00)	3.50 (2.00-5.00)	19 (0-43)
4 (n=242)	83 (54-114)	3.25 (2.20-4.50)	3.50 (1.83-5.00)	3.62 (1.88-5.00)	17 (3-41)
	KW=19.006 *P*=.001*	KW=21.533 *P*=.001*	KW=9.790 *P*=.020*	KW=12.136 *P*=.007*	KW=21.856 *P*=.001*
Gender					
Female (n=736)	81 (53-114)	3.10 (1.80-4.60)	3.50 (1.67-5.00)	3.62 (1.88-5.00)	18 (0-51)
Male (n=257)	78 (54-112)	3.10 (2.00-4.70)	3.33 (1.83-5.00)	3.50 (2.25-5.00)	17 (0-42)
	Z=−3.166 *P* =.002*	Z=−0.678 *P*=.498*	Z=−4.174 *P*=.001*	Z=−4.036 *P*=.001*	Z=−4.283 *P*=.001*
Economic situation					
Income less than expenses (n=93)	77 (54-106)	3.00 (2.00-4.20)	3.16 (2.33-4.83)	3.37 (2.00-5.00)	20 (0-47)
Income equals expense (n=783)	80 (53-114)	3.10 (1.90-4.70)	3.50 (1.67-5.00)	3.62 (1.88-5.00)	18 (0-51)
Income higher than expenses (n=117)	82 (64-114)	3.20 (1.80-4.50)	3.50 (2.33-5.00)	3.62 (2.50-5.00)	17 (3-37)
	KW=17.963 *P*=.001*	KW=9.738 *P*=.008*	KW=19.969 *P*=.001*	KW=12.856 *P*=.002*	KW=7.350 *P*=.025*
Where does she/he lives					
Dormitory (n=773)	80 (53-114)	3.10 (1.80-4.60)	3.50 (1.67-5.00)	3.50 (1.88-5.00)	18 (4-51)
At home with friends (n=63)	78 (63-109)	3.10 (1.90-4.40)	3.33 (2.33-5.00)	3.50 (2.63-5.00)	17 (0-30)
At home with friends (n=149)	85 (60-114)	3.30 (2.40-4.70)	3.66 (2.33-5.00)	3.75 (2.13-5.00)	18 (0-43)
Alone (n=8)	82.5 (56-110)	3.50 (2.50-4.20)	3.25 (2.33-5.00)	3.56 (2.00-5.00)	24.5 (9-37)
	KW=36.045 *P*=.001*	KW=33.751 *P*=.001*	KW=17.689 *P*=.001*	KW=27.498 *P*=.001*	KW=6.517 *P*=.089
Presence of chronic disease					
Yes (n=60)	81 (53-101)	3.10 (1.80-4.30)	3.41 (1.83-5.00)	3.62 (1.88-4.88)	19.5 (5-47)
No(n=933)	80 (54-114)	3.10 (1.90-4.70)	3.50 (1.67-5.00)	3.50 (2.13-5.00)	18 (0-51)
	Z=−0.659 *P*=.510	Z=−0.728 *P*=.466	Z=−0.659 *P*=.510	Z=−0.472 *P*=.637	Z=−2.262 *P*=.024*
Smoking status					
Yes (n=220)	78 (53-111)	3.10 (1.80-4.30)	3.50 (1.83-5.00)	3.37 (2.00-5.00)	17 (0-39)
No (n=773)	81 (54-114)	3.10 (1.90-4.70)	3.50 (1.67-5.00)	3.62 (1.88-5.00)	18 (0-51)
	Z=−3.025 *P*=.002*	Z=−0.987 *P*=.324	Z=−1.485 *P*=.138	Z=−3.906 *P*=.001*	Z=−2.875 *P*=.004*

HAC, Health Anxiety Scale; HPPB, Health Promotion and Protective Behaviors Scale.
*$P < .05$.

good and who have chronic diseases may experience health anxiety due to the concern of not getting regular and adequate health care. It is thought that women's anxiety levels may be higher because they often experience their emotional states more intensely than men, they give intense emotional responses to stress, their anxiety expressions are stronger, and they exhibit more health-seeking behaviors.

A limited number of studies have been found in the literature examining the effect of health anxiety levels on healthy lifestyle behaviors.[2,5,34,35] However, no research has been found yet that examines the effect of health anxiety levels on health promotion and protective behaviors. If the Health Anxiety Inventory and the Health-Promoting and Protective Behaviors Scale are evaluated together; In our study, it was determined that with the increase in health anxiety, health-promoting and protective behaviors decreased. Undesirable psychiatric symptoms may develop at the level of severe health anxiety. However, individuals engage in health-protective behaviors at the level of mild health anxiety and avoid health-hazardous situations.[35] It is thought that this situation will increase the level of health-promoting and protective behavior. In our study, it was determined that students with high health anxiety levels had lower levels of health-promoting and protective behavior. It is thought that uncontrollable health anxiety will lead to secondary health problems, burnout, and weariness in students who are nurses of the future. In this context, it is thought that creating counseling and training programs that will provide appropriate support for each class can be effective in managing and regulating the health anxiety levels of nursing students and increasing their positive coping strategies.

Limitations

The limitation of the study is that the universe could not be reached due to the absence of all students in the data collection process of the study. In addition, the data obtained from the study includes only the students studying and participating in the nursing department of a university.

Conclusion

It was determined that the student's health anxiety was low and their health-promoting and protective behaviors were moderate. On the other hand, it has been determined that students with low health anxiety have higher health-protective and improving behaviors. In this context, it is recommended to give seminars and training for nursing students to understand the importance of health-protective and improving behaviors, to transform this knowledge into behavior, and to be a role model for society.

Ethics Committee Approval: Ethics committee approval was received for this study from Sivas Cumhuriyet University Non-interventional Ethics Committee (number: 2019-05/32; date: May 22, 2019).

Informed Consent: Written and verbal consent were obtained from the students who participated in the study.

Peer-review: Externally peer-reviewed.

Author Contributions: Concept – E.Y., B.E.Ç., N.G.; Design – E.Y., B.E.Ç., N.G.; Supervision – N.G.; Resources – E.Y., B.E.Ç.; Materials – E.Y., B.E.Ç.; Data Collection and/or Processing – E.Y., B.E.Ç.; Analysis and/or Interpretation – E.Y., N.G.; Literature Search – E.Y., B.E.Ç., N.G.; Writing Manuscript – E.Y., B.E.Ç., N.G.; Critical Review – N.G.

Acknowledgments: The authors would like to thank all students who have participated in the study.

Declaration of Interests: The authors have no conflicts of interest to declare.

Funding: The authors declared that this study has received no financial support.

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