Adaptation of the Social Determinants of Health Scale for University Students to Turkish: A Validity and Reliability Study

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Abstract

Aim: Focusing, researching, identifying and producing solutions for the social health needs of university students is an important step in terms of individual and public health. The main purpose of this study is to make the Turkish adaptation of the social determinants of health scale and psychometric analyses to identify university students who are at risk for their social health needs and to solve their problems.

Method: The social determinants of health scale for university students was administered to 322 students. For the validity of the scale, content validity index, confirmatory factor analysis, similarity, and discriminant validity coefficients were used, while for reliability, item-total correlations, internal consistency coefficient, and test-retest analysis were utilized.

Results: The content validity index of the Turkish form of the social determinants of health scale for university students was found to be 0.89, and it was decided that there was a consensus among experts. The test-retest reliability correlation was 0.81 and the Cronbach alpha reliability coefficient was 0.71, which was found to be a reliable scale. The scale, which consists of three sub-dimensions measuring general social health needs, social health needs of university students, and promotive social health factors, was compatible with its original form.

Conclusion: The social determinants of the health scale for university students were found to be valid and reliable for Turkish culture. It is thought that it will be useful in determining the social health needs of university students.

Keywords: University students, social determinants of health, validity, reliability

Üniversite Öğrencileri İçin Sağlığın Sosyal Belirleyicileri Ölçeğinin Türkçe Uyarlaması: Geçerlik ve Güvenirlik Çalışması

Öz

Amaç: Üniversite öğrencilerinin sosyal sağlık ihtiyaçlarına odaklanmak, araştırmak, belirlemek ve çözüm üretmek, birey ve toplum sağlığı açısından önemli bir adımdır. Bu çalışmanın amacı, sosyal sağlık ihtiyaçları açısından risk altında olan üniversite öğrencilerini saptamak ve sorunlarını çözmek için sağlığın sosyal belirleyicileri ölçeğinin Türkçe uyarlamasını ve psikometrik analizlerini yapmaktır.

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Yöntem: Üniversite öğrencileri için sağlığın sosyal belirleyicileri ölçeği 322 öğrenciye uygulandı. Ölçeğin geçerliği için kapsam geçerlik indeksi, doğrulayıcı faktör analizi, benzerlik ve ayırt edici geçerlik katsayıları ve güvenirlik, madde-toplam korelasyon, iç tutarlılık katsayısı ve test-tekrar test analizi kullanıldı.

Bulgular: Üniversite öğrencileri için sağlığın sosyal belirleyicileri ölçeğinin Türkçe formunun kapsam geçerliği indeksi 0,89 bulunarak uzmanlar arası görüş birliği olduğu belirlendi. Test-tekrar test güvenirlik korelasyonu 0,81 ve Cronbach alpha güvenirlik katsayısı 0,71 bulunarak güvenilir bir ölçek olduğu bulundu. Genel sosyal sağlık ihtiyaçları, üniversite öğrencilerinin sosyal sağlık ihtiyaçları ve destekleyici sosyal sağlık faktörlerini ölçen üç alt boyutlu 18 maddeden oluşan ölçek orijinal hali ile uyum sağladı.

Sonuç: Üniversite öğrencileri için sağlığın sosyal belirleyicileri ölçeği Türk kültürüne uygun, geçerli ve güvenilir bulundu. Üniversite öğrencilerinin sosyal sağlık ihtiyaçlarının saptanmasında yararlı olacağı düşünülmektedir.

Anahtar Sözcükler: Üniversite öğrencileri, sağlığın sosyal belirleyicileri, geçerlik, güvenirlik

Introduction

Health is a multidimensional concept. Factors affecting health throughout history have been examined. In recent years, studies on health indicators of different societies have determined that the situation in which people are born, grow, work, live and age have a strong effect on morbidity and mortality, as well as medical care[1,2]. Therefore, by concluding that social factors are effective on health, the notion of social determinants of health has gained importance. For example, it has been supported by studies that cardiovascular and cancer mortality, psychological problems and bad health experiences are higher in people with low socioeconomic status compared to people with good socioeconomic status[3]. On the other hand, low socioeconomic level prevents access to health services, protection and improvement of health and affects the results of care received[4].

The social determinants of health (SDOH), which are defined as the social health needs of the individual, are the main cause of health inequality as well as the physical, social and psychological diseases that may occur, as they encompass the social, cultural, economic, political conditions in which people live[5]. The World Health Organization (WHO), in addition to the definition of social determinants of health, stated that the living conditions of the environments where people are born, grow, live, work and age should be improved, and that everyone should be provided with adequate shelter, clean water, toilet-bathroom and electricity. Many of the adolescents who distanced themselves from their families due to their university education have been affected by general social health needs such as not being able to access safe food or live in healthy housing since childhood[6]. Students who start their university education tend to develop stress due to the separation from their living environment, uncertainty due to experiencing university life for the first time, and financial worries to meet their basic needs such as housing and food[7]. In addition, food insecurity and housing instability will negatively affect their health[8]. Transitional instability associated with SDOH needs can lead to psychological distress and poor coping mechanisms such

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as risky sexual behaviors[9]. Therefore, college students need to be protected from experiencing SDOH needs or the negative consequences of having unmet SDOH needs[9]. Therefore, university students are a sensitive group for evaluating and improving social determinants of health[10].

It is very important for young people to become healthier adults and to transfer healthy lifestyle behaviors to future generations, thus improving public health. Therefore, first of all, it is necessary to determine the needs of university students in terms of social determinants of health, to determine their needs and to plan initiatives for improvement. It is thought that focusing, researching, determining and producing solutions to the social health needs of university students will be the right step towards preventing inequality in health. When the literature is examined, no study or measurement tool for the social determinants of health has been found. The purpose of the study is to make Turkish adaptation and psychometric analysis of the "Social Determinants of Health for University Students" scale, originally in English.

Material and Methods

This study of methodological type was carried out in September-October 2022 for university students. Since it is recommended to reach 10 times the total number of items in the scale studied in scale adaptation studies[11], 322 participants who approved the study were included in the study. The sample size was evaluated by performing KMO and Barlett tests. Two weeks after the first data collection, 50 university students were tested-retested.

Instrumentation

Participants were provided with the Participant Information Form and the Social Determinants of Health for University Students scale. The data used in the research were collected through Google Forms between September and October 2022.

Participant Socio-Demographic Form: This form, created by the researcher, consists of questions such as age, gender, class, and income level of the participants.

Social Determinants of Health for University Students Scale (SDH-US): The scale developed by Johnson et al.[12] consists of 18 items and three sub-dimensions: general social health (4 items), university student social health (11 items), and promotive social health (3 items). The scale has two (yes, no) options. The scale is evaluated over 18 points (Yes: 1 point, no: 0 points). High score indicates that university students have a high need for social health.

Statistical Analysis

The research data were evaluated using the SPSS AMOS Graphics 20 program and the SPSS 26 program, and the KMO and Bartlett sphericity tests were used to determine the adequacy of the sample size and the suitability of the items for factor analysis. Frequency tables and central-prevalence criteria were used to analyze the data for demographic information. Content and construct validity analysis for the validity of the scale and Cronbach's Alpha coefficient data were

examined. Internal consistency and test-retest analysis were performed for the validity of the scale.

Language Equivalency-Cultural Adaptation and Content Validity: SDH-US, whose original language is English, was translated into Turkish by two independent language experts who are competent in the field and its Turkish form was created. The Turkish form created was translated back into English by two different linguists and given its final form. The Turkish and English forms were examined in terms of suitability and content validity of 5 expert translations. According to experts, the appropriateness and clarity of each item in the scale is "not appropriate. (1)", "item needs to be changed (2)", "appropriate but needs minor change (3)" or "very appropriate (4)". They were asked to choose one of their answers. Necessary corrections were made in line with the suggestions of the experts[13].

Construct Validity: The SPSS AMOS Graphics 20 program was used for confirmatory factor analysis. Chi-square, degrees of freedom, root mean square of estimation errors, standardized root square mean square error, and comparative fit index fit/discord coefficients were evaluated.

Reliability: The reliability of the SDH-US scale was evaluated with internal consistency and retest. Cronbach's alpha reliability coefficient was used to measure internal consistency. In scale adaptation studies, it is stated that the Cronbach's alpha coefficient should be between 0.50 and 0.90[14]. Two weeks after the first SDH-US was applied, 50 university students were asked to fill in the scale again and the scores were evaluated by correlation analysis.

Ethical Approval: For the validity and reliability study of the scale, permission was obtained from Kaprea F. Johnson via e-mail. Approval for the research was obtained from the Dogus University Ethics Committee (19.08.2022-30310).

Results

The mean age of the university students was 19.63±0.70 years. 78.0% are university sophomores and 85.4% are studying in a health sciences department. Half of university students live with their families. The income level of 76.1% of the students is below 10 000 Turkish Liras. Other demographic information is given in Table 1.

Table 1. Socio-demographic Information of Students (n=322)

Variables	n	%
Gender		
Female	228	70.8
Male	94	29.2
Class		
1	35	10.9
2	251	78.0
3	23	7.1
4	13	4.0
Department		
Health Sciences	275	85.4
Liberal arts	6	1.9
Other	41	12.7
Who do you live with?		
Family	162	50.3
Cognate	12	3.7
Alone	23	7.1
Dormitory	90	28.0
Student House	28	8.7
Oher	7	2.2
Number of digits		
Alone	25	7.8
2	57	17.7
3	85	26.4
4	155	48.1
Scholarship Status		
Yes	89	27.6
No	233	72.4
Income rate		
5.499 and below	100	31.1
5.500-10.00	145	45.0
10.001-16.000	47	14.6
16.001 and above	30	9.3
Total	322	100.0

According to the data obtained from the 322 people who participated in the study, the total Cronbach alpha reliability coefficient of the SDH-US was 0.71, 0.74 in the general social health sub-dimension, 0.78, in the university students social health sub-dimension, and in the promotive social health sub-dimension. 61 found. The retest reliability correlation was 0.81. The mean score was again found to be 5.03±2.51 according to the social health needs of university students (Table 2).

Table 2. Reliability Analysis and Descriptive Statistical Values of SDH- US (n=322)

Factor (min-max)	Mean	Sd	Retest	Cronbach's alfa
General Social Health (0-4)	0.49	0.84	.79	.74
University Students Social Health (0-8)	3.62	1.72	.72	.78
Promotive Social Health (0-3)	0.91	0.84	.69	.61
SDH-US (0-14)	5.03	2.51	.81	.71

Sd: Standard deviation

The sample sizes of the SDH-US was evaluated with the KMO and Barlett Test. It was evaluated that the SDH-US Scale (KMO=0.744, p=0.00) was at a good level. The mean item level of the scale was between 3.70 and 3.90, and the content validity index was 0.89. In Confirmatory Factor Analysis, the general factor loads (standard weights) of the 18-item three-factor structured items of the SDH-US scale were 0.41 to 0.77; It was found between 0.58 and 0.60 in the general social health sub-dimension, between 0.40 and 0.75 in the university students social health sub-dimension, and between 0.54 and 0.77 in the promotive social health sub-dimension (Figure 1). As a result of examining the values of fit indices, it was found that the factor structure was compatible (X^2= 113.64; χ^2/sd=2.83; p=.00, CFI=0.91; RMSEA=0.07).

Figure 1. Item-Factor Loads
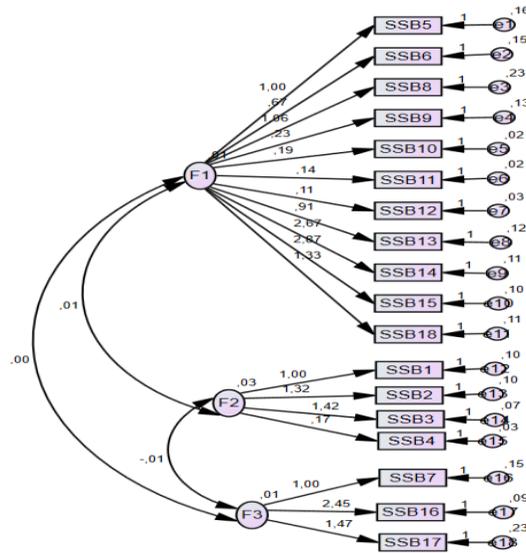
In this study, 55.9% (n=180) of university students stated that using social media, playing games or surfing the internet affected their sleep patterns, study, socialization, in short, their lives. It was determined that 71.4% (n=230) of them were worried about the amount of education loans/scholarships given to cover their education fees and expenses, and 71.1% (n=229) were concerned about covering their expenses. Additionally, it is observed that nearly half of the university students lack physical activity.

Discussion

This study aims to identify university students who are at risk in terms of social health needs and to introduce them to Turkish literature with the validity and reliability study of a screening tool for solving problems. When the literature was examined, no study was found on the social determinants of health in university students, except for the study conducted by Johnson et al (2022)[12]. There is an AHC Screening Tool consisting of ten approved questions on social determinants of general health, including housing instability, food insecurity, transportation problems and utility help needs[15]. Scales were developed by Harriett et al. (2023)[16] for pregnant women and Bao et al. (2018)[17] for the elderly to measure social health. In Turkey, the scale developed by Abachizadeh et al. (2014)[18] to determine the social health levels of individuals living in three major cities in Iran was adapted into Turkish by Erkoç (2021)[19]. It was determined that the SDH-US scale is a valid and reliable scale suitable for Turkish culture. Consisting of 18 items with three sub-dimensions that measure general social health, university students' social health, and promotive social health factors, the SDH-US scale was compatible with its original form.

Content validity is the degree to which a data collection tool serves the purpose[20]. Content validity is the suitability and representation power of the scale as a whole, the structure to be measured[21].

It is stated that expert opinion is needed to evaluate the content validity[13]. In this study, it was determined that the average score given to the items was between 3.70 and 3.90, and the content validity index was 0.89, after taking the opinion of 5 experts. The results showed that SDH-US items were appropriate for Turkish culture and the construct to be measured.

Confirmatory factor analysis (CFA) was used for construct validity and the general fit coefficients were $X^2= 113.64$; $\chi^2/sd=2.83$; p=.00, CFI=0.91; RMSEA=0.07 was found. Hair, Black, Babin, Anderson, and Tatham (2010)[11] state that the general fit coefficients of the model can be considered sufficient if the CFI is greater than .90 and the RMSEA is less than .08. Accordingly, it can be argued that the correlations between the items are adequately explained.

In this study, Cronbach's alpha coefficient, which is one of the internal consistency methods, was examined to determine the reliability of the scale[22]. The Cronbach alpha reliability coefficient of the SDH-US scale was found to be 0.71, 0.74 in the general social health need sub-dimension, and 0.78 In the sub-dimension of the promotive social health, 0.61 was found to be at medium reliability level. In the original study, the total scale Cronbach's alpha reliability coefficient was 0.69, 0.38 in the general social health sub-dimension, 0.66 in the university student social health sub-dimension, and 0.45 in the promotive social health sub-dimension[14].

Retest reliability is the repeated measurement of a scale so that it gives consistent results and does not change over time. In order to make these measurements, it is recommended to be at least two to four weeks apart[23] and to be performed with at least 100 participants[24], and the correlation coefficient to be ≥ 0.40[25]. In this study, test-retest reliability coefficients, which were conducted with 50 people two weeks after the first data collection, were generally high as 0.81 in the SDH-US scale, 0.79 in the general social health sub-dimension, and 0.72 in the university student social health sub-dimension. reliability level and the promotive social health sub-dimension were found to be 0.69.

Conclusion

According to these results, the Turkish form of SDH-US can be used. As a result of the study, it was determined that the lives of university students due to social media or internet use were affected, they were worried about meeting their education fees and expenses, and they lacked physical activity. It is thought that this measurement tool, which has been validated and reliable in Turkish, will be an important step in terms of public health by determining the social health needs of university students.

The short and easy application of the measurement tool will facilitate the determination of the social health needs of the health personnel, school health nurses and university students working in the infirmaries of their universities.

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