



## Reliability and validity of a Self-efficacy Scale for AIDS Prevention among Turkish university students

Serap Bulduk\*, Semra Erdoğan \*\*

### Abstract

This study design determined the internal consistency, validity and factorial structure of the Turkish Self-Efficacy scale for AIDS (T-SEA-27). The 27 items scale firstly was translated into Turkish using back-translation method and the cultural equivalence was provided by expert views. Secondly, the psychometric properties of the scale were evaluated on 507 university students. The test-retest reliability of the intraclass correlations was satisfactory in a subsample of 60 students tested after a 2-week interval. Psychometric analysis supported the reliability and validity of the T-SEA-27 scale and four subscales: refusing sexual intercourse ( $\alpha = .97$ ), questioning potential partners ( $\alpha = .90$ ), condom use ( $\alpha = .74$ ) and family related ( $\alpha = .95$ ). The self-efficacy score was significantly higher for those studying in health sciences, those who were not sexually active and the female students. Our outcomes showed that T-SEA-27 is a valid instrument in evaluating self-efficacy for HIV/AIDS in Turkish young people.

**Keywords:** Self-efficacy; HIV/AIDS; sexual risk behavior; university students; psychometrics (reliability and validity); Turkey

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## **Türk üniversite öğrencilerinde AIDS'ten Korunma Öz-yeterlilik Ölçeği'nin geçerlik ve güvenilirliği**

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### **Özet**

Bu iki aşamalı tasarım, AIDS Öz-yeterlilik ölçeğinin Türkçe formunun (T-AÖY-27) iç tutarlılığını, güvenilirliğini ve faktoriyel yapısını tanımladı. 27 maddelik ölçek önce geri-çeviri yöntemi ile Türkçe'ye çevirildi ve uzman görüşleri ile kültürel uygunluğu sağlandı. Daha sonra, psikometrik uygunluğu 507 üniversite öğrencisi üzerinde değerlendirildi. İki hafta aralıkla, 60 öğrenci ile ölçülen test-tekrar test tutarlılığı yeterli düzeyde bulundu. Psikometrik analizler T-AÖY-27'nin ve dört alt grubunun [cinsel ilişkiyi reddetme ( $\alpha = .97$ ), potansiyel partnere soru sorabilme ( $\alpha = .90$ ), kondom kullanma (.74) ve aile ile ilişkili boyut ( $\alpha = .95$ )] geçerlik ve güvenilirliğini destekledi. Sonuçlarımız gençlerde HIV/AIDS'e karşı öz-yeterliliği değerlendirmede T-AÖY-27'nin geçerli ve güvenilir bir araç olduğunu gösterdi.

**Anahtar Kelimeler:** Öz-etkililik; HIV/AIDS; cinsel risk davranışı; üniversite öğrencileri, psikometrik (geçerlik ve güvenilirlik); Türkiye

## 1. Introduction

Adolescents and young adults, including university students, are at higher risk of acquiring Sexually Transmitted Diseases (STD) because many engage in high-risk behaviors (Centers for Disease Control and Prevention (CDC), 2006). The World Health Organization (WHO) (2006) has reported that every year there are 340 million new cases of STD diagnosed, such as Chlamydia and gonorrhea, and one third of these cases are young people under the age of 25 years. Similarly 25% of the 33 million people in the world infected with HIV are in the 15-24 year old age group (Joint United Nations Programme on HIV/AIDS (UNAIDS), 2007). According to Turkey Ministry of Health data (2006), the total number of HIV/AIDS cases had reached 2544 people. Half of these cases are in the 15-39 year old age group and the majority was in heterosexual relationships. In addition it is estimated that the reported number of HIV/AIDS cases is much lower than the actual number and this number will increase in the future (Turkiye Ureme Sagligi Programi (TUSP), 2005). Studies conducted that the first sexual intercourse experience in the last 10 years was at an average of 19 years of age in Turkey but this has dropped to 17 years of age (Ozkan, 1994; HUNEE, 2004; Akin & Ozvaris, 2004). It has been also reported that approximately 28% to 60% of university students are sexually active (Donmez, 1999; Guner, Sur & Soylemez, 2005; Ergene, Cok, Tumer & Unal, 2005). In a study by Akin & Ozvaris (2004) with 3366 students at universities in an eastern and western province it was determined that 54.4%-70.6% (respectively) of the young people were having unprotected sexual intercourse and 4.5%-6.1% had experienced an unplanned pregnancy. Consistent use of condoms even lower; 10% to 30% of university students reported using them every time (Guner et al., 2005; Ateş, Karahan & Erbaydar, 2005)

The reasons for unsafe sexual behavior are related to lack of personal efficacy. Self efficacy, a component of Social Cognitive Theory, expresses the individual's perception or judgment of ability doing an action successfully or controlling the events or individual's judgment of the capacity of succeeding a performance level. Self-efficacy is situation specific refers to a person's belief that he or she can perform the behavior in question. Self-efficacy is situation specific (Bandura, 1986). According to Prochaska, DiClemente & Norcross (1992), self-efficacy is necessary for beginning, and then maintaining, successful behavior change. That is, studies indicate that people with high self-efficacy in a specific task are more likely to perform that task. The opposite is also true; people with low self-

efficacy are less likely to perform the particular behavior. Recent studies have measured self-efficacy in adolescent sexual behaviors and condom usage (Smith, McGraw, Costa & McKinlay, 1996; Zamboni, Crawford & Williams, 2000; Cecil & Pinkerton, 1998; Peterson & Gabany, 2001). However, instruments need to be validated for the specific population for which they are intended. The purpose of this study was to translate the Self-Efficacy scale for AIDS into Turkish (SEA-27) for defining sexual risk behaviors of Turkish young people in protecting them from AIDS and to establish its validity, reliability and applicability.

## **2. Methods**

A methodological design, specifically psychometric testing, was used to address the purposes of the study.

### **2.1. Sample**

Ferketich (1991) recommended at least 200 to 300 subjects are needed to evaluate the reliability of newly translated instruments. Furthermore, for principal-component factor analysis, the appropriate ratio of subjects to items is 10:1. For the SEA-27 scale with 27 items, at least 270 subjects were needed in this study. A convenience sample was drawn from a 2000-capacity student dormitory. The participants were 507 university students between the ages 18 and 30 years. Data were collected between June and September 2005. The eligibility criteria for students were: aged  $\geq 18$  years, not married or pregnant, not having had HIV (+) or AIDS, able to speak and understand Turkish.

### **2.2. Ethical Considerations**

Permission to use the SEA-27 was received from the author, Stephanie Kasen, to test the tool's validity and reliability. Permission was also received from the Istanbul Regional Director of student dormitories to conduct the study. University students were invited to participate in the study, were informed about it and then verbal consent was obtained. The purpose of the study and the necessary time for completion of the questionnaire were explained to respondents in a cover letter. The researchers guaranteed university students that their identities and answers would be kept confidential. Students were encouraged to complete the questionnaire unaided and in private. The data collection tools took an average of 20-25 minutes to complete without facing any difficulties.

### 2.3. Research Design

This two-stage design followed the procedures of previous work that validated instruments translated for use in different languages and cultures. The first stage involved the translation of the SEA-27 and examination of the newly developed Turkish SEA-27 (T-SEA-27) for cultural equivalency and content validity. Then in the second stage, the construct validity, internal consistency, and test-retest reliability were established. Figure 1 depicts the procedures used.

*Stage 1.* The SEA-27 was translated into Turkish by two bilingual linguistic experts independently. The experts met and reviewed the Turkish translations together for inconsistencies with the original English form and minor revisions were suggested. The adequacy of the Turkish translation of the SEA-27 was evaluated using the back-translation technique and content validity. The Turkish version of SEA-27 was back translated into English by a bilingual individual who works at the university in the public health department. The back-translated and original form of the SEA-27 were compared by a translation committee (two researchers, two translators, and two faculty members-nurse and medical doctor) and they agreed on a version of the T-SEA-27 that best reflected the linguistic and conceptual matter of the original SEA-27. Content validity was ascertained by a panel of experts. The experts [six members of nursing, five members of the faculty of medicine, a member of the faculty of dentistry, a psychologist who is an employee in AIDS Campaign Association and a program assistant of United Nations Population Fund (UNFPA)] were asked to evaluate each item on the scale for clarity and appropriate use. Each item was evaluated and given between 1-4 points for Content Validity Index (CVI) of one scale (1= not relevant, 4= very relevant) and 80% of the scale items were expected to be rated at least 3 or 4 points (Burns & Grove, 1997). In this study, the total CVI for T-SEA-27 was 0.96. Minor alterations were made in some items that were specified by experts. The 23rd item "...go to the store to buy condoms?" was changed to "... go to pharmacy/market to buy condoms?" and the 19th item "... use a condom during sex after you have been using a drug (marihuana, glue, thinner)?" as "...use a condom during sex after you have been using an anesthetic/stimulative drug (marijuana, glue, thinner).

*Stage 2.* The T-SEA-27 was then pretested on 25 university students in order to check the clarity of the items. The students found these items easy to respond to and no changes

were recommended. Post-pilot version of the scale was tested with 507 university students and test-retest reliability was tested with a two weeks interval on 60 university students.

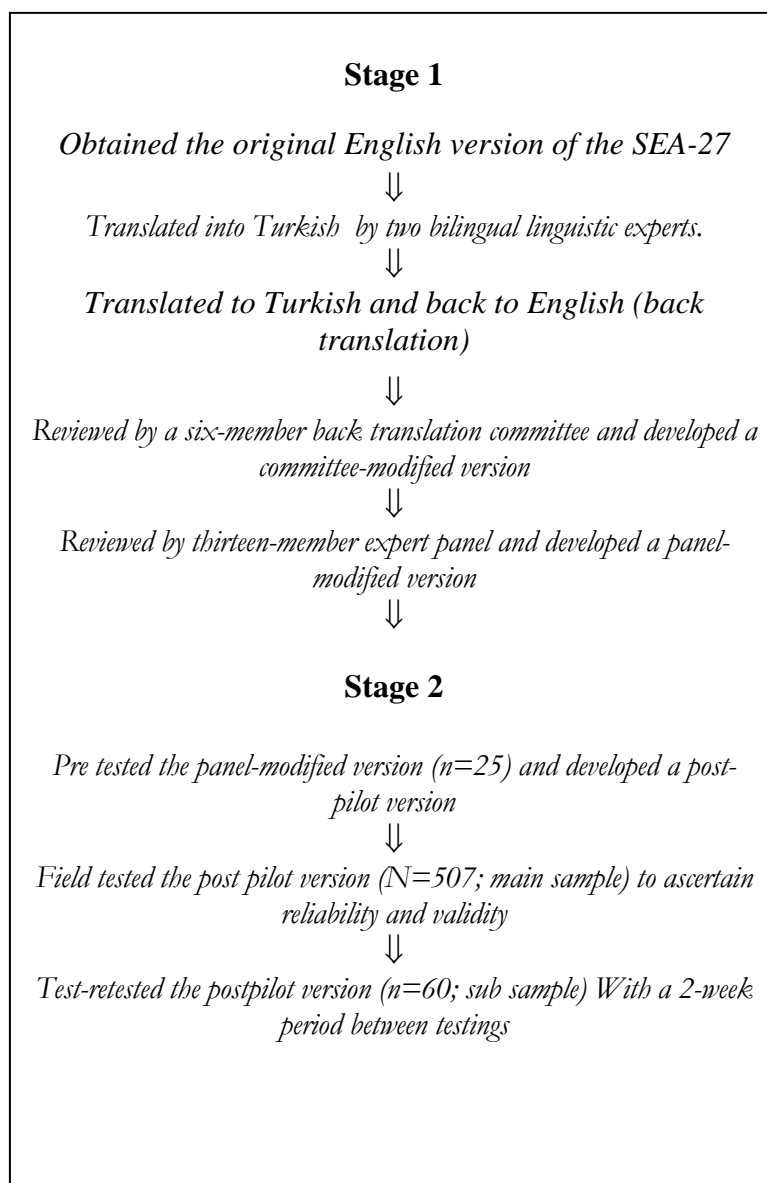


Figure 1. Flow chart for the development and evaluation of the T-SEA-27.

## 2.4. Instruments

### *Demographic questionnaire*

The Demographic questionnaire included gender, age, the education field (social sciences, science, health science), marital status (single, unmarried couples), income level (perceived income level was measured on a 5-points Likert scale: 1=very bad, 2=bad,

3=middle, 4=good, 5=very good), religiosity level (a 0-10 point visual analogue scale was used to measure the participants' perceived religious/spiritual beliefs), sexual experiences variables (age at first sexual intercourse, condom use at first sexual intercourse, whether or not first sexual intercourse was planned, experience with pregnancy and STDs).

### *Self-Efficacy Scale for AIDS*

The SEA-27 (López & Rubia 2001), has 27 Likert-type reactives with a five point variation, and evaluates self-efficacy with the Bandura's sociocognitive theory, in three aspects of sex-related behavior: (i) ability to say no to sexual intercourse under different circumstances, (ii) perceived ability to ask partner about previous sexual relations and other risk behaviors such as drug use, (iii) perceived ability to acquire and correctly use condoms. Initially Kasen, Vaughan & Walter (1992) developed the scale as 22 items by measuring adolescents between ages 15 and 19; in that study the internal consistency of this scale was high ( $\alpha = .91$ ). The scale was translated into Spanish and used with Mexican youth (Bayés, Villamarín & Ochoa, 1995) and high internal consistency was reported this time as well ( $\alpha = .91$ ). The scale was tested again on a large sample group of high school students (López, Salinas & Landero, 1999) and some items of the scale were modified, and the number of items were increased from 22 to 27. Internal consistency of the 27-item self-efficacy scale was found to be .91 and .89 respectively, in the two studies (López, Salinas & Landero, 1999; Lopez & Rubia, 2001). In the current study, we used the last version of the Self-Efficacy scale for AIDS (SEA-27).

### **2.5. Analysis**

The data were analysed using the SPSS for Windows (version 11.5 SPSS, Istanbul University, Turkey). Internal consistency of the scale was tested by Cronbach's alpha. Descriptive statistics (including means, standard deviations, frequencies and percentages) were calculated for demographic variables. The factorial structure was calculated by the factorial analysis technique. In order to extract the factors, the main components with Kaiser-type normalization of variables method was used. To determine the factors principal component technique and varimax rotation method were used. In order to determine factors, Eigen value and explained variance were examined. Test-retest reliability using intraclass correlation coefficients was evaluated with a 2-week interval between tests, with a sub-

sample of 60 university students who participated in the main study. Differences were tested with the Spearman correlation test, the Mann-Whitney U and Kruskal-Wallis tests for continuous variables not normally distributed.

### **3. Results**

#### **3.1. Sample Characteristics**

The sample group (n=507) were studying in social sciences (40.0%), science (37.9%) and health sciences (22.1%). Participants ranged in age from 18 to 30 years, with a mean age of  $21.95 \pm 2.15$  years; 63.3% were male and 36.7% were female. Most of students (92.9%) were single, 7.1% were unmarried couples living together. The mean perceived income level of most participants was  $2.97 \pm 1.37$ . Nearly half of those (52.7%) surveyed reported that they were sexually active, 65.1% of the men and 16.7% of the women. The mean age for the first sexual intercourse was  $17.6 \pm 2.00$  years of age for males and  $19.0 \pm 1.35$  years of age for females (total= $17.8 \pm 1.98$ ).

#### **3.2. Construct Validity**

To test for construct validity of the scale, the items of the 3 translated subscales were pooled and subjected to factorial analysis technique. The rotated factor matrix showed that 27 items have composition with 4 factors. The factor loading of items ranged between .63-.92 (Table 1). The third subscale is the one which unfolds into Factor 2 and Factor 3. Although four factors appear, the structure adjusts well to the three proposed subscales. All four factors had an Eigen value greater than 1 with and explained variance of 60%.

- The first factor (Factor 1) includes 11 elements (A1 to A11) which estimate the ability to say no to intercourse under different circumstances. It explains 32.79% of the total variance and shows a very high internal consistency of .97.
- The second factor (Factor 2) includes eight elements (C1 to C8), referring to condom use. It explains 22.41% of the total variance. It has a moderately high internal consistency of .74.



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- The third factor (Factor 3) includes four elements (C9 to C12) about marriage, faithfulness and talking about sex with parents. It explains 11.14% variance and has a very high internal consistency of .95.
- The fourth factor (Factor 4) includes four elements (B1 to B4) which talk about the ability to ask one's sexual partner about previous sexual relationships and other risk behaviors such as drug use. It explains 8.58% of the total variance and has a very high internal consistency of .90.

Table 1.

Rotated factor analysis of the T-SEA-27 (N=507)

Factor 1	Factor 2	Factor 3	Factor 4
A 9 0.912	C 1 0.921	C 12 0.867	B 3 0.834
A 1 0.908	C 3 0.900	C 11 0.861	B 1 0.770
A 5 0.898	C 5 0.877	C 9 0.780	B 2 0.738
A 4 0.892	C 2 0.856	C 10 0.775	B 4 0.634
A 3 0.882	C 6 0.854		
A 2 0.879	C 7 0.850		
A 11 0.854	C 4 0.819		
A 8 0.847	C 8 0.785		
A 6 0.841			
A 7 0.841			
A 10 0.812			
Eigen Value			
8.855	6.051	3.008	2.315
Variance explained			
32.795	22.411	11.141	8.576
Cronbach's alpha (internal consistency)			
0.9725	0.7377	0.9522	0.9019

### 3.3. Time Stability

Time stability of T-SEA-27 was tested with a two-week interval on 60 students. This time period was selected with the expectation that it was short to minimize the risk of

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eliciting responses that were recalled from prior testing. The test-retest correlation for 2-week interval was  $r(60) = 0.85, p < 0.01$ .

### 3.4. Reliability

The reliability coefficient for each subscale was calculated using the Cronbach  $\alpha$  technique. Item-total correlation coefficients and Cronbach alpha values ( $\alpha$ ) of scale and subscale are presented in Table 2. In the current study Cronbach alpha reliability coefficient for the items ranged from 0.51-0.93. The sum of elements in T-SEA-27 has a mean of 87.7 and a standard deviation of 23.9 (Range: 27-135). All elements show a significant correlation ( $p < 0.01$ ). The total Cronbach alpha of the scale was 0.93.

Table 2  
Item analysis and internal consistency of the T-SEA-27 (N=507)

Items	Mean	SD	Item-Total Correlation	p
How sure are you of being able to say no when someone... suggests having intercourse?				
A1 ... someone you've known for 30 days or less?	3.32	1.59	0.92	0.000
A2 ... someone whose sexual history is unknown to you?	3.45	1.58	0.89	0.000
A3 ... someone whose drug history is unknown to you?	3.46	1.54	0.90	0.000
A4 ... someone you've known before?	3.25	1.55	0.90	0.000
A5 ... someone you would like to get involved with again?	3.34	1.53	0.91	0.000
A6 ... someone with whom you have had sex before?	3.03	1.59	0.85	0.000
A7 ... someone you need to fall in love with you?	3.16	1.61	0.86	0.000
A8 ... someone who puts pressure on you to have sex?	3.40	1.61	0.87	0.000
A9 ... someone with whom you have been drinking alcohol?	3.17	1.59	0.93	0.000
A10 ... someone with whom you have been using drugs?	3.25	1.65	0.84	0.000
A11 ... someone with whom you are very sexually aroused?	3.00	1.64	0.86	0.000
How sure are you of being able to...				
B1 ... ask your boyfriend or girlfriend if he/she has used and injected drugs?	4.01	1.27	0.75	0.000
B2 ... discuss AIDS prevention with your boyfriend or girlfriend?	4.26	1.10	0.72	0.000
B3 ... ask your boyfriend/girlfriend about his/her past	3.65	1.33	0.84	0.000

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sexual relationships?				
B4 ... ask your boyfriend/girlfriend if he/she has had a homosexual experience?	3.31	1.49	0.70	0.000
How sure are you of being able to...				
C1 ... use a condom each time you have sex?	3.26	1.36	0.80	0.000
C2 ... use a condom correctly?	3.51	1.32	0.75	0.000
C3 ... use a condom during sex after you have been drinking alcohol?	3.17	1.39	0.81	0.000
C4 ... use a condom during sex after you have been using a anesthetic/simulative drug (marihuana, glue, thinner)?	3.15	1.43	0.75	0.000
C5 ... insist on using a condom during sex, even when your boyfriend/girlfriend would rather not use one?	3.37	1.38	0.75	0.000
C6 ... refuse to have sex if your partner does not agree to using a condom?	3.23	1.43	0.80	0.000
C7 ... always have enough money to buy condoms?	3.34	1.40	0.75	0.000
C8 ... go to pharmacy/market to buy condoms?	3.49	1.41	0.71	0.000
C9 ... not have sex until you are married?	2.52	1.64	0.54	0.000
C10 ... have sex only with one person during your whole lifetime?	2.73	1.60	0.56	0.000
C11 ... talk to your father about sexual topics?	2.35	1.56	0.51	0.000
C12 ... talk with your mother about sexual topics?	2.37	1.53	0.55	0.000
<b>Total <math>\alpha</math></b>			<b>0.93</b>	

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### 3.5. Sample Characteristics Associate with Self-Efficacy

Findings participant characteristics associated with self-efficacy are shown in Table 3. The students in health-related fields ( $p < 0.01$ ), those who were not sexually active ( $p < 0.01$ ) and female students ( $p < 0.01$ ) were found to have significantly higher self efficacy scores. A significant correlation in the positive direction was found between the self-efficacy scale score and income level ( $p < 0.001$ ), and religious belief level ( $p < 0.001$ ). However no relationship was found between T-SEA-27 scores and those from rural or urban areas, marital status, whether the first sexual intercourse was planned, use of a condom during first sexual intercourse, experience with STD or history of pregnancy.

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Table 3.

Sample characteristics associated with self-efficacy (N=507)

Characteristics	n	%	X	SD	Statistical Analyses
<b>Gender</b>					
Male	321	63.3	79.08	21.03	$z_{MWU} = -10.89$
Female*	186	36.7	102.48	21.32	$p = 0.00$
<b>Marital status</b>					
Single	471	92.9	89.00	23.64	$z_{MWU} = -1.11$
Living together	36	7.1	82.00	27.38	$p = 0.27$
<b>Previous place of residence</b>					
Urban	326	64.3	87.25	23.00	$z_{MWU} = -0.70$
Rural	181	35.7	88.41	25.60	$p = 0.48$
<b>Education field</b>					
Health sciences*	112	22.1	100.33	21.71	$\chi^2_{KW} = 42.96$ $p = 0.00$
Social sciences	203	40.0	83.13	24.41	
Science	192	37.9	85.08	22.18	
<b>Perceived income level (Mean±SD)</b>					
			2.97±1.37		$r = 0.123$ $p = 0.006$
<b>Religious belief level (Mean±SD)</b>					
			5.42±3.59		$r = 0.153$ $p = 0.001$
<b>Ever sexually active</b>					
Yes	267	52.7	77.88	20.89	$z_{MWU} = -8.86$ $p = 0.00$
No*	240	47.3	96.46	23.12	
<b>Used condom during first sexual intercourse</b>					
Yes	99	40.9	78.35	22.86	$z_{MWU} = -0.43$ $p = 0.67$
No	143	59.1	77.64	19.40	
<b>First sexual intercourse was planned</b>					
Yes	111	46.3	78.25	21.94	$z_{MWU} = -0.43$ $p = 0.67$
No	129	53.8	77.56	20.03	
<b>STD History</b>					
Yes	22	9.2	79.27	22.58	$z_{MWU} = -0.12$ $p = 0.90$
No	218	90.8	77.74	20.76	
<b>Pregnant history (self or partner)</b>					
Yes	26	13.5	98.81	23.55	$z_{MWU} = -0.45$ $p = 0.65$
No	167	86.5	101.71	21.77	

#### 4. Discussion

This study was the first attempt to adapt a scale that measures the perceived self efficacy for HIV/AIDS in Turkey. In this study, the investigators translated the last version of SEA-27 into Turkish, and adapted and tested it for measuring self-efficacy on university students in protection from AIDS. In our study, the content validity of T-SEA-27 was very high (CVI: %96) (Burns & Grove, 1997). Item-total correlation is expected to be higher than 0.30 for reliability of the scale. If total alpha levels are higher than .80 that is accepted as quite efficient or if they are over .70 that is accepted as efficient (Gozum & Aksayan, 2003). In this study, correlations between single items range from 0.51 to 0.93 and the Cronbach alpha for each subscale ranged from .73 to .97, indicating good levels of internal consistency.

Internal consistency according to the factorial structure of scale for SEAF1, SEAF3 and SEAF4 were found to be .97, .95 and .90, respectively which was higher than that of the Mexican study (.92, .75 and .80). The SEAF2 (.73) which has a rather low value was found to be similar to the Mexican study (López & Rubia, 2001). Internal consistency of the Turkish version of the scale (.93) was at the good level compared with the American (Kasen, Vaughan & Walter, 1992) and Mexican studies (.91 and .89, respectively) (López et al., 1999; López & Rubia, 2001). Additionally the test-retest correlation result (0.85) showed high consistency between the points that were achieved from applying the scale at separate times. Both the value of the test-retest and internal consistency coefficients were at the efficient level and showed that T-SEA-27 is a reliable measurement tool.

In our study construct validity of T-SEA-27 was also evaluated and the original scale with three factors showed composition with four factors in our study as in the Mexican study (López & Rubia, 2001). Factor loading of whole items was found to have a high value (over .60) and it was not seen to be necessary to remove the items. Items about “refusing sexual intercourse”, “questioning potential partners” and “condom use” subscales are aggregated as both were originally (Kasen et al., 1992) and were similar to the Mexican study (López & Rubia, 2001). Only four items (C9, C10, C11 and C12) of the “condom use” subscale clustered with a different factor in our study as in the Mexican study (López & Rubia, 2001). Two of these separated items measure perception about “monogamy” and the other two measure perception about “talking with parents about sexuality” (Table 1). In other words the perceptions that bring together sexuality with the family concept are separated from

subscale items of using a condom. This result might be related to Turkish and Mexican cultures which have more conservative and traditional beliefs about sexuality and marriage. Likewise, monogamy is accepted and approved traditionally in the Turkish culture. Young people having a sexual life, speaking about sexuality and even alluding to it are considered to be shameful and sinful by traditional families (Akin & Ozvaris, 2004; Ates et al., 2005). Studies also reported that Turkish young people do not speak about sexual issues with their families (Donmez, 1999; Cambaz et al., 2001).

The findings from this study have also provided an AIDS self-efficacy profile of a diverse adolescent group who had come to Istanbul from different regions of Turkey. The students' mean self-efficacy score ( $87.66 \pm 23.94$ ) was at a satisfactory level, similar to that of the American ( $84.89 \pm 18.28$ ) and Mexican ( $95.14 \pm 25.80$ ) young people (Kasen et al., 1992; López & Rubia, 2001). This score was significantly higher for those studying in health sciences, those who were not sexually active and the female students. The majority of the female students were not sexually active which is consistent with the taboo of women's sexuality in traditional Turkish society and religious beliefs (Yılmaz, 2006). In addition the total self-efficacy score was positively associated with religiosity and income level in all of the adolescents. McCree (2003) also found an increased score for “self-efficacy of condom use” in adolescents with high religiosity scores. The findings in the López & Rubia study (2001) were similar to ours in that as the adolescents' number of sexual relationships in the last six months and the number of partners increased the self-efficacy scores significantly decreased.

In summary, SEA-27 represents an important step in establishing a standardized, valid measure of Turkish youth. This study adds to a growing literature on the validity of SEA-27 among adolescents. The data regarding self-efficacy can be explained in that adolescents with a high level of confidence to avoid AIDS such as female youth, those educated in health sciences, those with limited experience of sexual intercourse, had high religiosity and income levels, even when they are in various risk situations, can be seen as having high self-efficacy for dealing with HIV risk behavior.

Limitations of the present study include a restricted local (university level adolescents) sample. Because the data used to test the psychometric properties of the measures were collected in a large metropolitan city, the asset measures presented here may exhibit different

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psychometric properties when administered in other geographic locations, larger urban areas, or in rural settings.

## 5. Conclusion

We conclude that the Turkish version of the SEA-27 is a valid scale for measuring sexual self-efficacy to prevent AIDS. Its distribution adjusts to the normal curve  $N(87.66, 23.94)$ , whose descriptive statistics were figured in a nonprobabilistic sample ( $n=507$ ), that was, incidentally, of Turkish adolescents (ages 18-30) from Istanbul, none of which had a diagnosis of AIDS or were HIV+. Thus, it can be used by professionals who work with HIV/AIDS to measure the level of adolescents' self-efficacy in AIDS prevention as part of health promotion programs. Such an assessment is necessary to identify youth's learning needs and to design HIV and STD prevention programs specifically tailored to target their misconceptions and faulty beliefs. In addition, further study with different Turkish populations will be required to confirm the factor structure of the scale.

## References

1. Akin, A. & Ozvaris, S.B. (2004). Adölesanların/Gençlerin Cinsel ve Üreme Sağlığını Etkileyen Faktörler (Proje özet rapor) [Project of Sexual and Reproductive Health of Adolescents]. Hacettepe Üniversitesi Tıp Fakültesi Halk Sağlığı Anabilim Dalı, Ankara.
2. Ates, D., Karahan, A. & Erbaydar T. (2005). Üniversite Öğrencileri Güvenli Cinselliği Nasıl Algılıyor? [The perception of university students about safe sexual life]. *Surekli Tıp Eğitimi Dergisi*, Vol: 14: p.130-134.
3. Bandura, A. (1986). *Social Foundations of Thought and Action: A Social Cognitive Theory*. Englewood Cliffs, NJ: Prentice-Hall.
4. Bayés, R., Villamarín, F. & Ochoa O. (1995). El SIDA En Los Adolescentes Mexicanos: Un Análisis de las Conductas de Riesgo Desde la Teoría de la Autoeficacia [Risky sexual behaviors for HIV/AIDS and self-efficacy perception in adolescents]. *Rev Psicológica Contemporánea*, Vol: 5: p. 46-55.
5. Burns, N. & Grove, S.K. (1997). *The Practice of Nursing Research Conduct, Critique&Utilization*. 3rd Ed., W.B. Saunders Company, Philadelphia.

Bulduk, S., Erdoğan, S. (2008). Reliability and validity of a Self-efficacy Scale for AIDS Prevention among Turkish university students. *International Journal of Human Sciences* [Online]. 5:2. Available: <http://www.insanbilimleri.com>

6. Cambaz, S., Avcik, S. & Karadag, N. (2001). Balikesir Universitesi Ogrencilerinin Evlilik Oncesi Cinsel Egitim ve Cinsel Yolla Bulasan Hastaliklar Hakkinda Bilgi Duzeyleri [The knowledge level of university students about sexuality]. *Hemsirelik Forumu Dergisi*, Vol: 4: p. 40-43.
7. Cecil, H. & Pinkerton, S.D. (1998). Reliability and Validity of a Self-efficacy Instrument for Protective Sexual Behaviors. *Journal of American College Health*, Vol: 47: p.113-122.
8. Donmez, L. (1999). Akdeniz Universitesi Turizm Yuksekokulu ve Beden Egitimi ve Spor Yuksekokulu Ogrencilerinin Cinsel tutum ve Davranislari [Sexual attitudes and behaviors of university students]. *HIV/AIDS Tıp Dergisi*, Vol : 2: p.147-152.
9. Ergene, T., Cok, F., Tumer, A. & Unal, S. (2005). A Controlled–Study Of Preventive Effects Of Peer Education and Single-Session Lectures on HIV/AIDS Knowledge and Attitudes Among University Students in Turkey. *AIDS Education & Prevention*, Vol: 17 : p. 268-278.
10. Ferketich, S. (1991). Focus on Psychometrics Aspects of Item Analysis. *Research in Nursing and Health*, Vol: 14: p.165-168.
11. Gozum, S. & Aksayan, S. (2003). Kulturlerarasi Olcek Uyarlamasi Rehberi II: Psikometrik Ozellikler ve Kulturlerarasi Karsilastirma [The psychometric properties of the scales]. *Hemar-G Hemsirelik Arastirma Dergisi*, Vol: 5: p. 3-14.
12. Guner, N., Sur, H. & Soylemez, D. Marmara Üniversitesi Öğrencilerinin Aile Planlaması Bilgi, Tutum ve Davranışları. [Contraceptive knowledge, attitudes and behaviors among university students] [http://www.sabem.saglik.gov.tr/akademik\\_metinler/linkdetail.aspx?id=1654](http://www.sabem.saglik.gov.tr/akademik_metinler/linkdetail.aspx?id=1654) (06.10.2005).
13. Hacettepe Universitesi Nufus Etudleri Enstitusu.(2004). Turkiye Nufus ve Saglik Arastirmalari 2003 [Demographic and health surveys in Turkey]. International Inc. Ankara: Measure DHS-Macro.
14. Kasen, S., Vaughan, R.D. & Walter, H.J. (1992). Self-efficacy for AIDS Preventive Behaviors Among Tenth Grade Students. *Health Education Quarterly*, Vol:19: p. 187-202.
15. López, F., Salinas, M.C. & Landero R. (1999). Se Perciben Más Autoeficaces las Mujeres en la Pprevención de Conductas de Riesgo Sexual [Risky sexual behavior and self-efficacy perception]. *Perspectivas Sociales*, Vol: 2: p. 77-86.
16. López, F. & Rubia, J.M. (2001). Validation of a self-efficacy scale for AIDS Prevention Among Adolescents. *Salud Pública de México*, Vol : 43.



Bulduk, S., Erdoğan, S. (2008). Reliability and validity of a Self-efficacy Scale for AIDS Prevention among Turkish university students. *International Journal of Human Sciences* [Online]. 5:2. Available: <http://www.insanbilimleri.com>

- 
17. McCree, D.H., Wingood, G.M., DiClemente, R., Davies, S. & Harrington K.F. (2003). Religiosity and Risky Sexual Behavior in African-American Adolescent Females. *Journal of Adolescence Health*, Vol: 33: p. 2-8.
  18. Ozkan, H. (1994). Universite Gencliginin Aile Planlanmasi ve CYBH'dan Korunmaya Iliskin Yaklasimlari [The family planning and prevention of STD behaviors of university students]. I.U. Saglik Bilimleri Enstitusu Yuksek Lisans Tezi (Danisman: Doc. Dr. Semra Erdogan).
  19. Peterson, Y., Gabany, S.G. (2001). Applying the NIMH Multi-site Condom use Self-efficacy Scale to College Students. *American Journal of Health Studies*, Vol: 17: p.15-19.
  20. Prochaska, J.O., DiClemente, C.C. & Norcross, J.C. (1992). In Search of How People Change. Applications to Addictive Behaviors. *American Psychology*, Vol:47: p: 1102-1114.
  21. Sexually Transmitted Disease Surveillance (2006). Division of STD Prevention November 2007. Centers for Disease Control and Prevention National Center for HIV/AIDS, Viral Hepatitis, STD, and TB Prevention Division of STD Prevention Atlanta, Georgia 30333.
  22. Smith, K.W., McGraw, S.A., Costa, L.A., McKinlay, J.B. (1996). A Self-efficacy Scale for HIV Risk Behaviors: Development and Evaluation. *AIDS Education & Prevention*, Vol: 8: p: 97-105.
  23. T.C. Saglik Bakanligi Temel Saglik Hizmetleri Genel Mudurlugu Çaliřma Yıllığı 2006. HIV/AIDS Veri Tablolari [The Ministry of Health of Turkey, HIV/AIDS Statistics] <http://www.saglik.gov.tr/TR/istatistik/2006/menu.doc> (03.04.2008).
  24. T.C. Saglik Bakanligi, Turkiye Ureme Sagligi Programi (TUSP) (2005). Turkiye'de Cinsel Yolla Bulasan Enfeksiyonlar (CYBE) ve HIV/AIDS'in Surveyans Sistemine Iliskin Durum Analizi [STD and HIV/AIDS in Turkey Surveillance System Analysis], [Turkey Reproductive Health Program], DELTUR/MEDTQ/20-02, Ankara.
  25. UNAIDS (2007). AIDS Epidemic Update. Special Report on HIV Prevention, WHO Library Cataloguing-in-Publication Data, December.
  26. Yilmaz, H. (2006).Turkiye'de muhafazakarlik aile, din, bati: İlk sonuclar uzerine genel degerlendirme". Yayimlanmamis arastirma raporu. Proje Destegi: Acik Toplum Enstitusu ve Bogazici Universitesi. Kamuoyu Arastirmasi: Infakto Research Workshop. Danismanlar: Dr. Emre Erdogan, Guclu Atilgan. Arastirma Asistanlari: Bahar Baser, Omer Ak. Kamuoyu Arastirmasi.
  27. Zamboni, B.D., Crawford, I. & Williams, P.G. (2000). Examining Communication and Assertiveness as Predictors of Condom use: Implications for HIV Prevention. *AIDS Education & Prevention*, Vol: 12: p: 492-504.