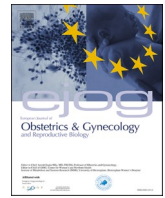




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Full length article

Development of a scale for attitude toward sexually transmitted infections based on the Health Belief Model

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ABSTRACT

Objectives: Determination of the attitudes of individuals toward sexually transmitted infections (STIs) can also help identify barriers to health service-seeking behavior. Hence, this study aimed to develop a scale for determining the attitudes of individuals toward sexually transmitted diseases.

Study Design: This was a methodological study. The Health Belief Model (HBM) framework was used to elucidate the perceptions and interpretations of illnesses among individuals. After reviewing the relevant literature, an item pool was created to include 4 dimensions (perceived susceptibility (A), perceived severity (B), perceived benefit (C), and perceived barriers and self-efficacy (D)) about sexually transmitted diseases from the perspective of HBM. Exploratory factor analysis was conducted to evaluate the construct validity of the scale. Moreover, confirmatory factor analysis was used to examine the suitability of the items in terms of factor structures.

Results: The final version of the scale comprised 19 items and 4 subdimensions. The first subdimension of the scale accounted for 20.11% of the total variance, whereas the second, third, and fourth subdimensions accounted for 17.83%, 12.50%, and 8.75% of the total variance, respectively. Collectively, these four subdimensions accounted for 59.19% of the total variance. The Cronbach's alpha reliability coefficient of the scale was found to be 0.74. **Conclusions:** Briefly, the present study led to the development of a novel assessment tool, Attitude Toward Sexually Transmitted Infections Scale. Higher scores on the scale indicated higher likelihood of taking action for a possible STI treatment according to the HBM approach.

Introduction

Sexually transmitted infections (STIs) comprise various clinical syndromes that are caused by pathogens transmitted from one person to another via unprotected sexual contact. STI is an important public health concern in developing countries because of its high incidence and heavy disease burden due to complications and sequelae [1]. According to the World Health Organization, more than 1 million individuals are estimated to be infected with STIs every day worldwide. Moreover, 374 million new cases of curable STIs are reported annually [2].

Most STIs occur without any noticeable symptoms, making them difficult to detect in the public. Chlamydia in particular is known as a 'silent STI' due to its lack of obvious symptoms and is difficult to detect and control despite its serious long-term health risks. This not only leads to undetected and untreated infections that can harm the reproductive system, but also increases silent spread in the community [3,4].

STIs are probably the most taboo diseases we know. Many taboos and

associated stigma shape patients' lives and significantly influence healthcare policies. To better understand these complex effects, the still strong taboos surrounding illness and disease must be analyzed against the backdrop of cultural realities. Social stigma is one of the barriers to STI diagnosis and is associated with underutilization of prevention services [5,6]. Some individuals avoid STI diagnosis and treatment because they do not perceive STIs as a serious condition, because they think their risk of contracting the disease is low, or because of fear of genital examination. Some people hesitate to seek treatment due to the high financial costs of testing for the disease or the attitudes and behaviors of healthcare personnel. Sometimes, consequences such as possible social exclusion and stigmatization after the diagnosis of the disease constitute an obstacle to diagnosis and treatment [7–9].

AbelloLuque D and his colleagues developed a scale measuring the level of STI knowledge with the view that the level of STI knowledge is important in encouraging healthy sexual behaviors [10]. Scales that question sexual risk behaviors and correct sexual health practices of

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people have also been developed [11,12]. It has been reported that norms guided by knowledge, attitudes, beliefs, and practices encourage individuals to change their behavior. However, the level of knowledge and behaviors of the individuals are not always compatible with their attitudes [13]. Accurate health information may not always result in correct health behavior. Or, while questioning individuals' behavior regarding a health event is seen as taboo, questioning their attitudes may make them feel better and respond more easily. It may be more realistic to determine STI attitudes, especially in more closed societies.

The Health Belief Model (HBM) was developed by social psychologists in the 1950s to explain the widespread failure of people to participate in programs to prevent and detect disease. HBM consists of several underlying constructs to predict whether individuals will take action to prevent, detect, or treat diseases. These constructs relate to perceived susceptibility, perceived severity, perceived benefits, perceived barriers and self-efficacy [14–17].

Perceived susceptibility measures an individual's individual beliefs about the likelihood of contracting the disease. When we look at it from an STI perspective, perceived susceptibility measures the perception of being infected with STIs after sexual intercourse with individuals with multiple partners. Perceived severity measures beliefs about the seriousness of contracting the disease or leaving it untreated. For example, it measures her perception that she may become infertile if the STI goes untreated. Perceived benefits are beliefs about the positive characteristics or advantages of a proposed action to reduce the threat. For example, it measures the perception that condom use will reduce the transmission of this disease. Perceived barriers are potential obstacles to taking action, which may include negative consequences resulting from an action. For example, it measures the extent to which healthcare professional or community stigma hinders action. Self-efficacy is; It examines the belief that one can perform the recommended health behavior [14–17]. This study aimed to develop an attitude scale based on HBM that measures the likelihood of seeking treatment in case of a possible STI.

Methods

Study design

This methodological research was conducted after obtaining written permission from Şanlıurfa Provincial Health Directorate and Harran University Clinical Research Ethics Committee (dated and numbered 22.08.2022). This study was supported by Harran University Scientific Research Projects Unit with the number 22,223 and was conducted in accordance with the principles of the Declaration of Helsinki.

Setting and sample

This study was conducted in Şanlıurfa province located in the Southeastern Anatolia Region of Turkey. According to Turkey socio-economic development ranking survey, Şanlıurfa ranks 73rd among 81 provinces in terms of socioeconomic development [18].

The present study included individuals aged > 18 years who were registered to Family Health Centers (FHCs) in Şanlıurfa city center and who did not have communication and language problems.

Pilot applications: The items were tested using 2 pilot studies, with 100 individuals included in each assessment, which is the standard for scale development studies. Further, the main study was used to determine the validity and reliability of the candidate scale.

The main study: The study population comprised individuals aged > 18 years who applied to FHCs in the city center of Şanlıurfa. A list of 80 FHCs in urban and rural settlements in 3 central districts in Şanlıurfa was obtained from Şanlıurfa Provincial Health Directorate. As the sampling method, 30 cluster sampling methods recommended by the World Health Organization to be used in infectious diseases were used. This method is a sampling method developed by the World Health

Organization (WHO). In the 30 cluster sampling method, there are 7, 10, 15, etc. in each cluster. Large numbers of people can be included in the research. In this study, we chose to recruit 10 people per cluster. Based on this list, 30 FHCs were randomly selected in proportion to the number of units in each FHC. Each selected FHC represented a separate cluster. In each FHC, 10 individuals who met the study criteria were approached, and the main study was completed with 300 individuals.

Measurement

Data were collected using the sociodemographic information form and candidate scale developed by the researchers.

In the sociodemographic information form, there are 10 questions regarding the sociodemographic characteristics of the individuals (age, gender, educational status, marital status, having a child, income level, employment status, chronic disease status, and disability status).

Further, the candidate scale was developed after content validation and two pilot applications in the field.

The following steps were followed during the development of the candidate scale (Attitudes Toward Sexually Transmitted Infections Scale [STIAS]):

We thought that individuals who think that they have a high probability of contracting an STI, who are aware of the potential health consequences of not being treated and the health benefits of seeking treatment, and who think that they are capable of performing health behaviors, will be more likely to take action for treatment. For this reason, we decided to use the theoretical framework of HBM while developing a scale to determine their attitudes towards STIs. After reviewing the relevant literature, an item pool of 37 questions was created to include 4 dimensions (perceived susceptibility –6 items (A), perceived severity –10 items (B), perceived benefit –7 items (C), and perceived barriers and self-efficacy –14 items (D)) about sexually transmitted diseases from the perspective of HBM.

The items in the candidate scale comprise propositions coded on a five-point Likert scale (strongly agree, agree, somewhat agree, disagree, and strongly disagree).

The suitability of the items in the item pool in terms of content and scope was first evaluated by a team of six experts in the fields of obstetrics and gynecology, infectious diseases, and public health.

Subsequently, the language and comprehensibility of the candidate scale were tested by applying it to a group of 10 individuals. The candidate scale was then revised to incorporate ideas and suggestions.

Finally, the suitability of the scale items was evaluated according to the Lawshe's technique [19,20]. In this context, the opinions of 10 experts in the field were obtained. Further, the expert opinions were evaluated, and the content validity ratio (CVR) of the items was calculated. Seven items with low CVR were excluded from the candidate scale.

Pilot applications were conducted using the 30-item candidate scale. These applications were conducted with individuals selected from the specified population but not included in the research sample. After the first pilot scale application, 10 items with low comprehensibility were revised.

Further, after the second pilot scale application, eight items with inappropriate item-total correlations were excluded from the scale. The main study was started with the remaining 22 items. Fig. 1 shows the preparation steps of the candidate scale until the main study.

Data collection

Şanlıurfa is a city where seasonal agricultural labor takes place and out-migration occurs in the summer months. Therefore, the data collection phase was held between November 2022 and March 2023. All participants were informed about the purpose of the study, and only those who agreed to participate were included. Informed consent was obtained from all individuals participating in the study. The interviews

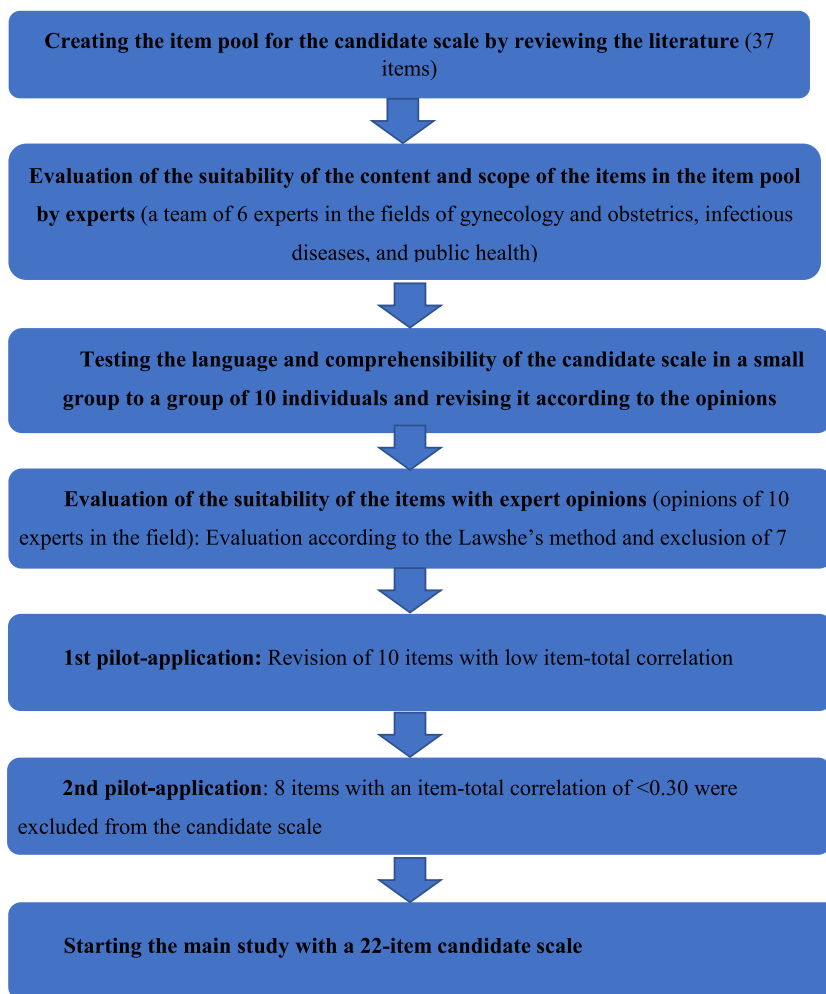


Fig. 1. Schematic of the construction of the questions of the candidate scale.

were conducted in a comfortable environment where individuals could answer the questions in FHCs, and each interview lasted for approximately 15–20 min.

Data analysis

The obtained data were analyzed using the Statistical Package for Social Sciences for Windows 20.0 and Amos statistical software package. Frequency distributions and percentages were used to represent categorical data of the participants, whereas mean, median, standard deviation, minimum, and maximum values were used to represent the numerical data. Notably, the chi-square test, Mann–Whitney *U* test, and Kruskal–Wallis analysis of variance were used to examine the relationship between sociodemographic characteristics and the scores obtained from the scale.

Exploratory factor analysis (EFA) was conducted to evaluate the construct validity of the scale.

For examining the factor structure, Bartlett's test was performed for determining the suitability of the dataset for factor analysis, and the Kaiser–Meyer–Olkin (KMO) test was performed for determining the adequacy of the sample size. During the factor extraction method, principal component analysis and factor rotations were performed using varimax rotation method (factor loadings; eigenvalue, variance explained).

Moreover, confirmatory factor analysis (CFA) was used to examine the suitability of the items with the factor structures as well as to assess the satisfactory representation of these factors and the overall structure.

Several statistical analyses were used, including item-total score analysis to assess the reliability of the scale, Cronbach's alpha coefficient to measure the internal consistency, Tukey's additivity analysis to evaluate the additivity feature of the scale, and Hotelling's T-Square test to examine any potential response bias in the scale.

A p-value of < 0.05 were considered statistically significant.

Results

Sociodemographic characteristics of pilot applications

1. Pilot application: The median age of the participants was 34.50 (18–62) years. Among the participants, 63.00 % were women, 82.00 % were married. The corrected item-total correlation of each item in the item pool was examined and its suitability for the scale was examined. Since the corrected item total correlation value of 10 items was lower than .30, the sentences were revised by taking the opinions of field experts without compromising the integrity of the meaning.
2. Pilot application: The median age of the participants was 40.50 (23–66) years. Among the participants, 64.00 % were women, 89.00 % were married. The corrected item correlation of 8 items was lower than .30, so they were removed. The main application started with 22 items.

Sociodemographic characteristics of respondents

The median age of the study participants was 33 (18–79) years. Among the participants, 49.66 % were women, 83.33 % were married, and 78.00 % had children. Moreover, 17.33 % had not received any formal education, 20.33 % were primary school graduates, 19.66 % were middle school graduates, 26.33 % were high school graduates, and 16.33 % were university graduates. Regarding the employment status of the participants, 51.66 % were engaged in remunerative occupations, and 20.66 % regarded their income as sufficient or highly satisfactory.

Semantic and content validity

The content validity of the scale was evaluated using the Lawshe’s method. According to this method, when the number of experts is 10, the CVR predictive value is 0.80. Therefore, seven items with a CVR value of < 0.80 were excluded from the candidate scale. A 30-item version of the candidate scale was created to be tested with a pilot application.

Construct validity

After the first pilot application, ten items with low comprehensibility were revised. Further, after the second pilot application, eight items with item-total correlation values of < 0.30 were excluded from the scale. Finally, a 22-item scale was generated for validity and reliability analyses.

EFA was conducted to determine the construct validity of the candidate scale. First, the suitability of the variables for factor analysis was analyzed using KMO and Bartlett’s test of sphericity. The KMO value of this scale is 0.79. Notably, a KMO value of > 0.50 indicates that the sample size is suitable for the analysis [21]. Furthermore, Bartlett’s test of sphericity was found to be statistically significant ($\chi^2 = 2161.05$; $p < 0.001$). A significant test result ($p < 0.05$) indicates that the matrix formed by the relationships between variables is significant for EFA and that factor analysis can be performed [22].

EFA was conducted with the aim of reducing the data and explaining the scale structure. During EFA, the number of subdimensions was predetermined as four, and varimax rotation was used to enhance the interpretability and clarity of the underlying structure. After conducting the analyses based on the four-subdimension structure, three items were excluded from the candidate scale owing to their cross-representation across multiple subdimensions (overlapping items). In its final form, the scale comprises 19 items and 4 subdimensions. The item-total correlation value of each item varies between 0.546 and 0.896. The first subdimension of the scale accounts for 20.11 % of the total variance, whereas the second, third, and fourth subdimensions account for 17.83 %, 12.50 %, and 8.75 % of the total variance, respectively. Furthermore, collectively, these four subdimensions account for 59.19 % of the total variance. Table 1 shows the structure of the scale comprising four subdimensions and item-total correlations.

The validity of the structure obtained after EFA was tested using CFA. As CFA examined the relationships between constructs instead of those between variables, it confirmed the scale dimensions obtained after EFA. To represent the structure clearly, modifications were made between the errors of a1 and a4; c1 and c3; c1 and c5; and d1 and d4. The fit indices of the scale whose construct validity was tested in this form are shown in Table 2, and the path diagram is shown in Fig. 2.

Reliability

Cronbach’s alpha reliability coefficient was used to determine the internal consistency of the scale. This coefficient of the scale was found to be 0.74. The additivity of the scale items was evaluated using the Tukey’s additivity test, which is one of the tests used to determine the reliability of the scale ($F: 54.14$; $p < 0.001$). Furthermore, Hotelling T-squared test was performed to determine response bias for the scale

Table 1
Four-subdimension structure of the scale revealed by exploratory factor analysis.

Scale items	Item factor loadings			
	A	B	C	D
I believe that I am at an elevated risk of acquiring sexually transmitted infections	.813			
I anticipate a substantial likelihood of experiencing genital sores or redness within the next 5 years	.825			
I perceive a significant probability of experiencing discharges in my genital region	.777			
I believe that my susceptibility to acquiring sexually transmitted diseases is higher than that of other individuals of the same gender	.842			
I have a sense that at some stage in my life, I will encounter a sexually transmitted disease	.761			
To protect against sexually transmitted diseases, attention should be paid to the contamination of blood and genital discharges		.715		
To safeguard oneself against sexually transmitted diseases, one should be refrain from engaging in contact with sex workers		.549		
Condoms/covers should be used to protect against sexually transmitted diseases		.711		
In the presence of wounds, redness, or discharge in the genital area, sexual intercourse should be avoided		.683		
Monogamy should be preferred to protect against sexually transmitted diseases		.565		
By undergoing treatment for my sexually transmitted disease, I can mitigate the risk of infertility			.706	
By undergoing treatment for my sexually transmitted disease, I can mitigate the risk of death			.703	
By undergoing treatment for sexually transmitted disease, I can mitigate the risk of uterine cancer for me or my partner			.774	
By undergoing treatment for sexually transmitted disease, I can enhance my chances of conceiving a child			.808	
If my sexually transmitted disease is treated, my enjoyment of sexual intercourse will increase			.582	
I know where to apply when I have sexually transmitted disease				.853
I can undergo a medical examination alone when I have a sexually transmitted disease				.866
I can notice abnormal changes in my genital region				.896
Having a sexually transmitted disease is nothing to be ashamed of				.766
Total variance explained: 59.19 %; KMO: 0.79; Bartlett’s Test of Sphericity: $p < 0.001$; $\chi^2: 2161.04/df: 171$				

Table 2
Fit indices of the scale tested with CFA [30,32–37].

Fit indices	Fit indices of the scale	Perfect fit criteria	Acceptable fit criteria
χ^2 / df	1.54	$0 \leq \chi^2 / sd \leq 2$	$2 \leq \chi^2 / sd \leq 3$
GFI	0.93	$0.95 \leq GFI \leq 1.00$	$0.90 \leq GFI \leq 0.95$
AGFI	0.90	$0.90 \leq AGFI \leq 1.00$	$0.85 \leq AGFI \leq 0.90$
NFI	0.90	$0.95 \leq NFI \leq 1.00$	$0.90 \leq NFI \leq 0.95$
CFI	0.96	$0.95 \leq CFI \leq 1.00$	$0.90 \leq CFI \leq 0.95$
RMSEA	0.04	$0.00 \leq RMSEA \leq 0.05$	$0.05 \leq RMSEA \leq 0.08$

items (Hotelling $T^2 = 1113.71$; $p < 0.001$).

The relationship between the scale and sociodemographic variables

The relationship between the total score obtained from the scale and the sociodemographic variables of the participants is shown in Table 3. There was a statistically significant positive association between the educational level of the participants and their total scores on the scale,

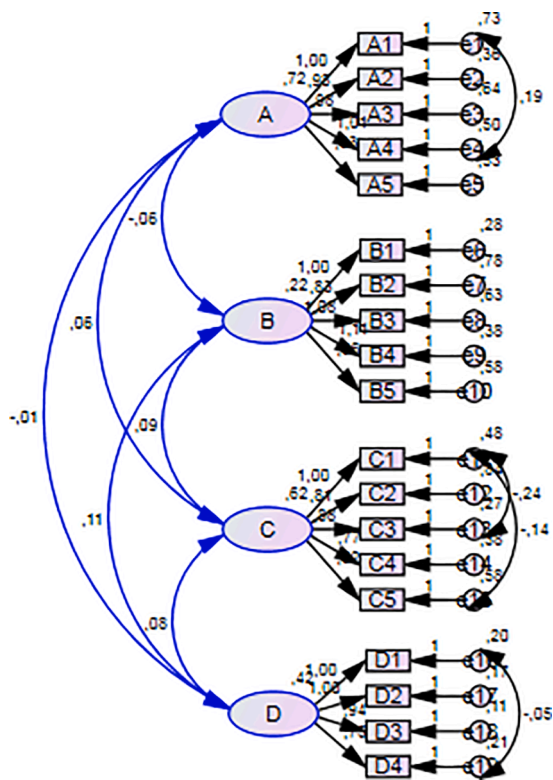


Fig. 2. Path diagram of the scale. Results of the confirmatory factor analysis with the full sample of 300. The standardized solution of the Amos output is reported.

indicating that higher educational levels are correlated with higher scale scores ($p = 0.006$). Notably, there was no significant difference between the other variables and the total score obtained from the scale (Table 3).

Discussion

STIs are diseases that continue to hold significance despite numerous campaigns aimed at their prevention and treatment over the years. A substantial number of these diseases can manifest without apparent symptoms, resulting in individuals being unaware of their illness. Consequently, they can inadvertently act as disease carriers and become susceptible to chronicization and subsequent complications (such as pelvic inflammatory disease, infertility, fetal anomalies, cancer, and mortality) associated with their own condition [23,24]. However, even when these individuals experience symptoms, they may refrain from seeking health care services because of limited comprehension of the disease’s severity, apprehension regarding genital examination, perceived financial burden associated with diagnosis and treatment, or fear of social stigmatization and exclusion [7,8]. Therefore, it is necessary to determine the factors affecting health service-seeking behaviors to control STIs. With the identification of these factors, it can be possible to assess the probability of individuals seeking health care services in cases of suspected STI.

Numerous cultural, social, and economic factors can greatly influence knowledge, attitudes, and risky health behaviors of individuals. Determining the attitudes of individuals toward STIs may reveal their health service-seeking behaviors [25]. To the best of our knowledge, in the relevant literature, no scale has been found to measure individuals’ attitudes toward STIs. Hence, the Attitudes Toward STIAS was developed. This scale is expected to help health care professionals in determining individuals’ attitudes toward STIs and their inclination to seek health care services in cases of potential STI.

EFA was conducted to evaluate the construct validity of the scale.

Table 3

The relationship between the scale total score and the socio-demographic factors of the individuals.

Variables		Mean (SD)	MWU or KW	P
Age	33 years and below	66.07 (8.11)	11092.00	0.86
	34 years and above	65.86 (6.80)		
Sex	Female	66.45 (7.33)	10185.50	0.16
	Male	65.49 (7.67)		
Education level	Primary school and below	66.00 (6.85)	12.31	0.006
	Secondary school	64.13 (7.55)		
	High school	65.55 (7.74)		
Working status	Universty	68.79 (7.91)	11063.00	0.81
	Working	65.98 (7.76)		
Income level	Not working	65.95 (7.25)	3.64	0.16
	Enough /very enough	67.56 (7.28)		
Marital status	Middle	65.87 (7.77)	5990.00	0.64
	Insufficient /very inadequate	65.25 (7.29)		
	Married	65.43 (8.61)		
Having a child	Single	66.08 (7.28)	7668.00	0.93
	Yes	66.00 (7.10)		
Chronic disease status	No	65.87 (8.84)	5811.50	0.80
	Yes	66.34 (7.08)		
Disability status	No	65.90 (7.59)	249.50	0.18
	Yes	61.33 (4.04)		
		66.02 (7.52)		

This analysis has two important contributions in scale studies. First, it facilitates the identification of the number of latent variables. Second, it helps with data reduction by identifying the minimal number of items that account for the highest variance [26]. Principal component analysis was conducted considering the total variance, and it revealed that the scale comprises four subdimensions. In the relevant literature, it has been recommended that the total variance should be $\geq 30\%$ in unidimensional scales and $40\%–60\%$ ($\geq 50\%$) in multidimensional scales [27,28]. The first, second, third, and fourth subdimensions of the scale accounted for 20.11%, 17.83%, 12.50%, and 8.75% of the total variance, respectively. In scale development studies, variance plays an important role in ensuring the reliability and validity of the developed scale. An important consideration is the percentage of variance explained by factors in the scale. It is desired that it be at least 30% in one-dimensional scales, and between 40–60% (at least 50%) in scales with more than one dimension. The fact that the explained variance rate in this study is 59.19% shows the structural soundness of the scale [27–29].

Moreover, in scale development studies, the item-total correlation value determined for each item should be > 0.30 [30–32]. In the final version of the scale, which comprises 19 items and 4 subdimensions, the item-total correlation value of each item is > 0.30 (0.546–0.896). In this respect, the factor loadings of the items of Attitude Toward STIAS are suitable for scale development studies.

CFA is performed to determine the degree of fit between the actual data and the theoretical model derived from EFA. Moreover, CFA evaluates the fitness of the data reduced and variance explained by EFA [32,33]. The outcome of CFA revealed a χ^2/df value of 1.54, which evaluates the fit between the population covariance matrix and the sample covariance matrix. This value indicated an excellent level of fit for the present study [30,34]. The goodness of fit index (GFI), which reflects how well the model measures the covariance matrix in the sample, was found to be 0.93, which is an acceptable level of fit [30,34]. The adjusted goodness of fit index, which was developed to overcome the limitation of the GFI test in high sample size, was found to be 0.90, which is an acceptable level of fit [30,34]. The normed fit index was found to be 0.90, which is an acceptable level of fit [30,34]. The comparative fit index, which indicates the goodness of fit of the model, was found to be 0.96, which is considered an excellent fit for this study [30,35,36]. The root mean square error of approximation, which is used to estimate the approximation error of the model in the population, was 0.04, which is considered an excellent fit for this study [30,35,37]. All values determined after CFA and explained above indicate that the model fit of the scale is good, and the four-subdimension structure is effective.

Cronbach's alpha reliability coefficient is an indicator of internal consistency of the scale. It is obtained by dividing the sum of the variances of the questions in a scale by the overall variance. Cronbach's alpha evaluates whether the questions in the scale form a homogeneous structure. This value (0–1) indicates the level of consistency, with values approaching 1 indicating higher consistency. Notably, values of > 0.70 are considered acceptable in this context [30,31]. In this study, Cronbach's alpha coefficient was found to be 0.74. In this respect, it can be noted that the internal consistency of the items of STIAS is appropriate.

The Tukey's additivity test was conducted to assess the summability of item scores within the scale, which indicates whether the developed measurement tool satisfies the Likert additivity criteria [38]. According to the result of the additivity test, the significance value of $p < 0.001$ indicated that the scale scores were suitable to be summed to obtain a total score. Hotelling T-squared test was conducted to determine the response bias for the scale items. We found that the item means were different, and there was no response bias (i.e., there was no biased response to the scale). Therefore, it can be noted that the scale is reliable for measuring STI attitudes.

When the relationship between the total score obtained from STIAS and sociodemographic variables of the individuals is examined, it can be noted that the total score of the scale increases as the level of education increases. Similarly, numerous studies have shown that as people become more educated, they tend to prioritize their health and take appropriate medical action [39–41].

This scale was designed to determine individuals' attitudes towards STIs and the likelihood of seeking treatment in case of a possible STI. After the scale development is completed and it is determined that it is valid and reliable, a 'value' should be assigned to the score obtained from the scale. Evaluation is the process of making a decision or judgment about an individual with that measurement score, based on a single measurement. There are approaches that differentiate evaluation according to whether or not a comparison is made in the evaluation of the individual's score or measurement. There are four approaches to evaluating the criterion score (33):

- Ranking based valuation
- Valuation based on group values
- Evaluation based on maximum score
- Evaluation based on cut-off score

For this study, we preferred to make evaluation based on maximum score. The scores that can be obtained from the scale are between 19 and 95. An increase in the score obtained from the scale indicates a high probability of taking action for a possible STI treatment according to the

SIM approach.

STIAS can be used to monitor groups that may have risky health behaviors related to STIs, such as adolescents, adult men, and long-distance drivers. The surveillance system can be improved, and groups with higher risk can be identified within the risk groups. With health education, these groups can be taught health-protective and promoting behaviors such as safe sex, single-partnership or condom use.

Conclusions

This study was conducted with individuals aged > 18 years. Therefore, its validity and reliability in measuring STI attitudes in adolescence could not be tested. Further studies are warranted for testing the scale in the adolescent group or for developing a new attitude scale specific to this group.

This study helped in the development of a novel assessment tool called Attitude Toward STIAS. Validity and reliability analyses revealed that the scale, comprising 4 subdimensions and 19 items, accounted for 59.19 % of the total variance. The total score that can be obtained from the scale varies between 19 and 95. A higher score indicates a higher likelihood of taking action for a potential STI treatment according to the HBM approach.

Declarations

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Author contributions

All the authors have approved the manuscript and agree with submitting to your esteemed journal.

CRedit authorship contribution statement

Burcu Beyazgul: Writing – original draft, Visualization, Validation, Supervision, Resources, Project administration, Methodology, Investigation, Formal analysis, Data curation, Conceptualization. **Fatma Koruk:** Writing – review & editing, Writing – original draft, Data curation, Conceptualization. **Ibrahim Koruk:** Writing – review & editing, Writing – original draft, Project administration, Data curation, Conceptualization.

Declaration of competing interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

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