Research Article

The Relationship Between Knowledge Level of Sexually Transmitted Diseases and Sexual Health Literacy in Women Applying to Gynecology and Obstetrics Outpatient Clinic

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Abstract:

This study aims to examine the relationship between women's knowledge levels about sexually transmitted infections (STIs) and their sexual health literacy (SHL). Women aged between 18 and 45 participated in the study, and data collection involved the STI Knowledge Scale (STIKS) and the Sexual Health Literacy Scale (SHLS). Findings indicate that as STI knowledge levels increase, sexual health literacy decreases ($p<0.05$). It was determined that 73.5% of participants had not received sexual health education, and 58.6% faced difficulties in accessing sexual health information. Additionally, it was found that individuals living in rural areas had higher STI knowledge levels but lower sexual health literacy.

The study results reveal that current sexual health education programs are insufficient in improving individuals' ability to apply knowledge. Therefore, it is recommended that educational content be made more interactive and practice-based. The cultural adaptation of educational materials for individuals living in rural areas is of particular importance. Future research should assess the long-term impacts of educational programs and develop strategies to enhance sexual health literacy.

1. Introduction

Sexually transmitted infections (STIs) remain a significant public health issue worldwide, affecting both individual and societal health. According to the World Health Organization (WHO), millions of people contract STIs each year, and one of the key elements in preventing the spread of these infections is increasing individuals' knowledge levels [1]. Women, in particular, are more vulnerable to STIs due to biological and social factors. In this context, increasing women's knowledge about STIs can have a direct impact on their use of preventive methods and their health-seeking behaviors.

Sexual health literacy is defined as the ability of individuals to access, understand, and use sexual health-related information to make informed health decisions [2]. High sexual health literacy can enhance individuals' awareness of STIs, encourage the conscious use of preventive measures, promote regular health check-ups, and help them avoid risky sexual behaviors [3]. Examining the relationship between sexual health literacy and STI knowledge levels is crucial for developing effective interventions aimed at improving women's sexual health.Women visiting gynecology and obstetrics clinics represent a group that regularly benefits from sexual health services. Investigating the relationship between their knowledge levels about STIs and their sexual health literacy is essential for both individual health protection and public health promotion.

This study aims to explore how these two variables are related, providing valuable insights to enhance the effectiveness of sexual health education and awareness programs.

Research hypotheses/questions:

1. What is the relationship between women's knowledge levels about sexually transmitted infections and their sexual health literacy?
2. Does sexual health literacy predicy sexually transmitted infections in women?

2. Material and Methods

This study was designed as a cross-sectional descriptive research. The data for the study were collected from women who visited the gynecology and obstetrics clinic of the Private Eastern Anatolia Hospital between November 2024 and January 2025.

2.1 Study Population and Sample

The study population consisted of women who visited the gynecology and obstetrics clinic of the Private Eastern Anatolia Hospital. The questionnaire and scales were completed face-to-face, and participants were included in the sample after providing informed voluntary consent. The adequacy of the sample size for the study was assessed using a G-power post-hoc analysis.

2.2 Data Collection Tools

As data collection tools, the Sociodemographic Form prepared by the researchers, the STI Knowledge Scale, and the Sexual Health Literacy Scale were used.

2.2.1 Sociodemographic Form

The sociodemographic form, prepared by the researchers after a literature review, includes questions related to gender, age, marital status, and other relevant factors.

2.2.2 STI Knowledge Scale

The Kaiser-Meyer-Olkin (KMO) value of the scale was found to be 0.866, indicating a very good level of sample adequacy. The scale consists of 25 items and six subdimensions. It has been validated and found reliable for the Turkish culture as a standardized measurement tool to assess individuals' knowledge and awareness of sexually transmitted infections (STIs). A higher score indicates a higher level of STI knowledge. The scale can be used in studies evaluating the STI knowledge levels of healthcare professionals [4].

Sexual Health Literacy Scale

Developed by Üstgörül [5], the Sexual Health Literacy (SHL) Scale is a 17-item, five-point Likert-type scale. The scale has a two-factor structure focusing on sexual knowledge and sexual attitudes. In its development study, the Cronbach's alpha coefficient was found to be 0.88. A higher score indicates a higher level of sexual health literacy [5].

2.3 Data Analysis

For the evaluation of demographic data, frequency, percentage, and mean values were used. The normality of data distribution was tested using the Shapiro-Wilk test. For the comparison of numerical data between two independent groups, Student's t-test or the Mann-Whitney U test was applied, while one-way ANOVA or the Kruskal-Wallis test was used for comparisons among more than two independent groups. The relationships between categorical variables were analyzed using the Chi-square test, and correlations between numerical variables were assessed with correlation coefficients.

Statistical analyses were performed using SPSS 24 for Windows. A p-value of less than 0.05 was considered statistically significant. The Bonferroni correction test was applied to identify the group responsible for significant differences.

Inclusion Criteria
- Being over 18 years old.
- Being able to read and write.
- Having no physical or mental disabilities.
- Having no auditory, visual, or verbal speech impairments.
- Volunteering to participate in the study.

Exclusion Criteria
- Individuals who refuse to participate in the study.
- Individuals with a psychiatric diagnosis.
- Individuals under the age of 18.

2.4 Ethical Considerations

Approval for conducting the study was obtained from the Non-Interventional Human Research Ethics Committee of Munzur University. All stages of the research were carried out in accordance with the Helsinki Declaration. Participants invited to the study were informed about its purpose, assured that the collected data would only be used for scientific purposes, and notified that they could withdraw from the study at any time without any consequences on their lives. Additionally, it was explained that their information would be kept confidential. Participants were included in the

study only after providing informed voluntary consent.

3. Findings

The average age of the women participating in the study was 31.03±8.40, with the majority (58.6%) in the 18-31 age range. Among the participants, 47.8% had an income equal to their expenses, 69.1% lived in the city, and 51.8% had a moderate level of knowledge about the transmission routes of sexually transmitted infections (STIs). The level of knowledge about STI prevention was moderate in 47.8% of the participants, while knowledge about STI symptoms was moderate in 53.8%. A total of 73.5% of women had never received any education on sexual health, and 58.6% lacked access to information about sexual health (Figure 1).
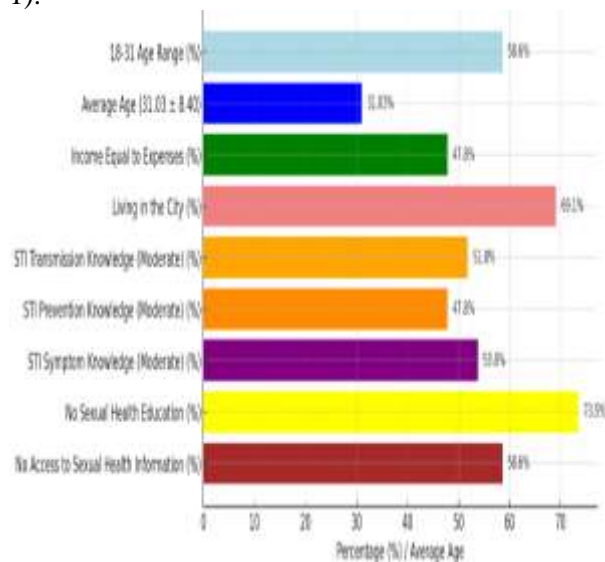

Figure 1. *Demographic Characteristics and Sexual Health-Related Features of the Women Participating in the Study*

The total Cronbach's reliability coefficient of the Sexually Transmitted Infections Knowledge Scale (STIKS) was determined as (α)= 0.904, while the reliability coefficient of the Sexual Health Literacy Scale (SHLS) was found to be (α)= 0.816. The mean score for the Sexually Transmitted Infections Knowledge Scale was 52.63±8.21, and the mean score for the Sexual Health Literacy Scale was 46.85±10.37.According to the Pearson correlation analysis, a significant negative correlation was found between the STIKS and SHLS (r=-0.186, p=0.003) (Table 1). Additionally, there was no statistically significant positive correlation between the sexual knowledge subdimension and the sexual attitude subdimension with the STIKS. It can be stated that as the level of knowledge about

sexually transmitted infections increases, sexual health literacy decreases (Table 1).

Figure 2 illustrates the relationship, density, and scatter plot among the variables.

When comparing the mean STIKS (Sexually Transmitted Infections Knowledge Scale) scores according to descriptive characteristics, a statistically significant difference was found in relation to age, place of residence, STI transmission knowledge level, STI prevention knowledge level, STI symptom knowledge level, access to sexual health information and comprehension, and receiving sexual health education (p<0.05).

Additionally, a statistically significant difference was found between SHLS (Sexual Health Literacy Scale) and STI transmission knowledge level as well as receiving sexual health education (p<0.05) (Table 2). A multiple linear regression analysis was conducted to determine the sociodemographic variables influencing the changes in STIKS (Sexually Transmitted Infections Knowledge Scale). Dummy variables were used for categorical data. Sociodemographic variables were found to be statistically significant in the regression model (F = 6.351, p=0.05).

In the analysis, STI symptom knowledge levels 2 and 3, as well as sexual health education, were found to be significant predictors (p<0.05), while other variables were found to be non-significant (p>0.05). The sociodemographic variables explained 34% of the variance in STI knowledge scores (R²=0.290).

The regression model showed a normal distribution of the dependent variable and residuals. Additionally, the autocorrelation test (DW=1.825) indicated no autocorrelation issue. The VIF values confirmed that there was no multicollinearity in the model (VIF<5) (Table 3).

Results and Discussions

This study evaluates the knowledge levels of female participants regarding sexually transmitted infections (STIs) and their sexual health literacy (SHL). The findings indicate that as STI knowledge levels increase, sexual health literacy decreases. This suggests that possessing more knowledge about STIs does not necessarily lead to the expected positive impact in terms of comprehension and health literacy. A similar result has been observed in societies with limited access to sexual health education [6]. Our research found that 73.5% of women had not received any sexual health education, and 58.6% lacked access to information on the topic
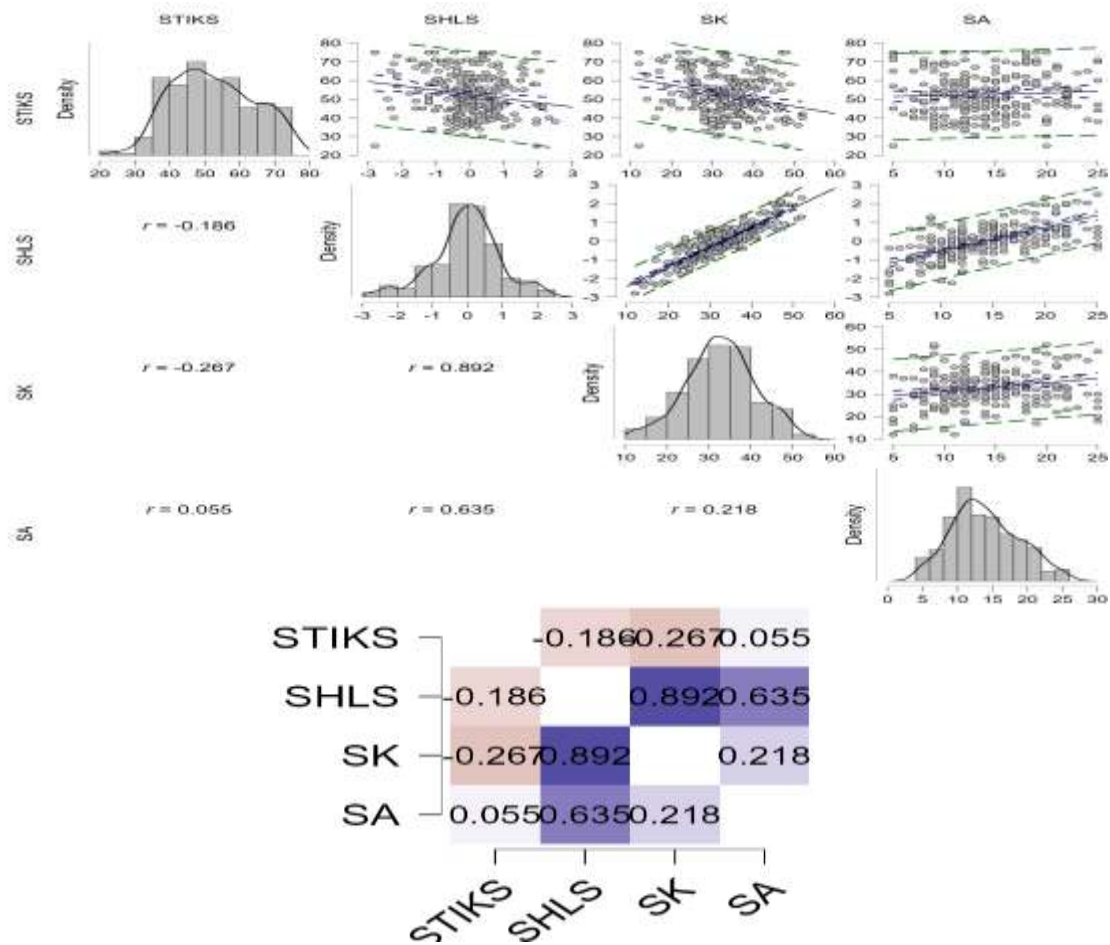
Figure 2. *Relationship, Density, Scatter, and Heat Map of Scales and Subdimensions*

Table 1. *Mean Scores and Reliability Coefficients of the Sexually Transmitted Infections Knowledge and Sexual Health Literacy Scales*

Scale and Subdimensions	X̄±SS	Cronbach Alpha (α)	Correlation	Confidence Interval
Sexually Transmitted Infections Knowledge Scale (STIKS)	52.63±8.21	0.904	r= -0.186 p= **0.003***	%95 Cl Upper: -0.304
Sexual Health Literacy Scale (SHLS)	46.85±10.37	0.816		%95 Cl Lower: -0.063
Sexual Knowledge (SK)	32.87±8.21	0.823	r= -0.267 p= 0.055	
Sexual Attitude (SA)	14.024±4.79	0.792	r= 0.555 p= 0.387	
*p<0.05				

Table 2. *Comparison of Sexually Transmitted Infections Knowledge and Sexual Health Literacy Scale Scores by Descriptive Characteristics*

Variables		%	STIKS x̄ ±SD	t / F	p	SHLS x̄ ±SD	t / F	p
Age	18-31 (1)	158.6	51.09±11.56	3.288		47.63±9.97	1.064	
	32-45 (2)	35.3	54.51±11.90		**0.039**	45.59±11.04		0.347 *
	46 and above (3)	15/6	56.53±9.75			46.66±10.11		
Income Status	Income < Expenses (1)	34.9	54.56±11.12	1.934	0.147	46.65±8.74	0.249	0.78
	Income = Expenses (2)	47.8	51.35±11.85			47.32±11.24		

	Income > Expenses (3)	17.3	52.25±12.113				46.23±10.54		
Place of Residence	City	69.1	51.39±11.64	4.379	**0.014**		47.09±10.52	0.869	0.421
	Town	18.9	53.76±11.98		*		47.42±9.87		
	Village	12.0	57.93±10.15				44.53±10.29		
STI Transmission Knowledge Level	None	22.1	60.29±11.34	22.720	**0.000**		44.50±11.25	3.318	**0.038**
	Moderate	51.8	52.18±10.70		*		46.61±10.21		*
	Good	26.1	47.03±10.47				49.30±9.50		
STI Prevention Knowledge Level	None	20.1	60.54±11.05	22.385	**0.000**		45.92±10.35	1.809	0.166
	Moderate	47.8	52.74±11.18		*		46.02±10.54		
	Good	32.1	47.51±10.04				47.74±10.27		
STI Symptom Knowledge Level	None	18.5	62.21±9.63	25.526	**0.000**		44.86±12.39	1.497	0.226
	Moderate	53.8	51.73±10.90		*		46.79±9.94		
	Good	27.7	47.97±10.92				48.27±9.64		
Access to and Comprehension of Sexual Health Information	None	8.4	58.80±12.76	11.585	**0.000**		47.28±10.06	1.012	0.385
	Moderate	44.2	55.16±10.87		*		45.80±10.53		
	Good	47.4	49.16±11.27				47.74±10.27		
Receiving Sexual Health Education	Yes	26.5	45.58±7.34	-7.316	**0.000**		49.37±1.11	2.329	**0.000**
	No	73.5	55.08±12.01		*		45.93±10.69		*
*p<0.05, **t**=Independent t test, **F**= One Way ANOVA, **Bnf**= Bonferroni test									

Table 3. *Regression Analysis to Identify the Variables Contributing to Changes in STIKS (Sexually Transmitted Infections Knowledge Scale)*

	B	**t**	**p**	**F**	**p**	**R²**	**DW**	**VIF**
Constant	60.233	11.377	0.000					
SHLS (Sexual Health Literacy Scale)	-0.11	-1.721	0.087					1.054
Age	0.096	1.2	0.231					1.073
Income 2	-1.154	-0.782	0.435					1.309
Income 3	0.343	0.174	0.862					1.332
Place of Residence 2	0.602	0.346	0.730					1.117
Place of Residence 3	3.029	1.433	0.153					1.140
STI Transmission Knowledge Level 2	-3.738	-1.857	0.065					2.435
STI Transmission Knowledge Level 3	-3.612	-1.32	0.188					3.481
STI Prevention Knowledge Level 2	-1.975	-0.908	0.365	6.351	0.000	0.290	1.825	2.842
STI Prevention Knowledge Level 3	-3.045	-1.147	0.253					3.704
STI Symptom Knowledge Level 2	-5.891	-2.769	**0.006**					2.710
STI Symptom Knowledge Level 3	-5.698	-2.219	**0.027**					3.180
Access to and Comprehension of Sexual Health Information 2	2.205	0.847	0.398					4.026
Access to and Comprehension of Sexual Health Information 3	-0.576	-0.208	0.835					4.605
Receiving Sexual Health Education 2	4.69	2.629	**0.009**					1.493
* p<0.05; **Reference Categories:** **Income: Income < Expenses (1)** **Place of Residence: City** **STI Transmission Knowledge Level: None** **STI Prevention Knowledge Level: None** **STI Symptom Knowledge Level: None** **Access to and Comprehension of Sexual Health Information: None** **Receiving Sexual Health Education: Yes**								

This finding is consistent with literature, as a lack of access to sexual health education in developing countries increases the risk of misinformation regarding STIs [7]. Given that individuals who received sexual health education had higher STI knowledge levels but did not experience the expected increase in literacy, the adequacy of educational content and methods should be questioned [8].

In our study, a significant difference was found between STI transmission knowledge and STIKS scores (p<0.05). The literature also highlights that inadequate sexual health knowledge contributes to an increase in risky sexual behaviors, especially among young individuals [9]. However, low sexual health literacy increases the risk of misunderstanding and misapplying correct information [10].

When evaluating access to sexual health information, it was observed that women living in rural areas had higher STI knowledge levels but lower literacy levels. This finding may be explained by the fact that individuals in rural areas often access information from limited and sometimes inaccurate sources [11]. The rapid spread of misinformation, particularly through the internet, has further contributed to the misguidance of individuals [12].

Regarding age, as individuals grow older, their STI knowledge levels tend to increase, while their sexual health literacy decreases. This may be due to the reduced engagement of older individuals with healthcare services [13].To improve sexual health literacy, educational programs tailored to different age groups and individual needs should be developed [14].

One of the key findings of our study is that individuals who received sexual health education had lower STI knowledge levels but higher sexual health literacy. This suggests that educational programs should focus not only on knowledge transfer but also on improving individuals' ability to apply that knowledge effectively [15]. Unlike traditional health education methods, practice-based and participatory approaches have been shown to be more effective in improving health literacy [16].

In conclusion, our findings indicate that simply increasing knowledge about sexual health is not sufficient; education should also focus on enhancing individuals' ability to interpret and apply that knowledge. The fact that STI awareness does not necessarily correlate with improved health literacy suggests that educational content should be revised.

In this context, sexual health education programs should be made more comprehensive and interactive. Rather than limiting education to theoretical knowledge, it should teach individuals how to apply this knowledge in their daily lives. Hands-on training, digital health literacy materials, and participatory learning methods may be more effective in achieving this goal.

Our findings also emphasize the need to support individuals in rural areas in terms of sexual health literacy. Therefore, educational materials should be adapted to local cultures and designed to address different socioeconomic groups.

Future studies should evaluate the long-term effects of sexual health education programs and examine how individuals acquire and apply health knowledge in greater detail. Increasing research on the impact of educational programs on individuals' perceptions of sexual health will contribute to the development of more effective intervention strategies.

Author Statements:

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