



Related Factors of Sexual Abstinence Behavior of College Women: A Transtheoretical Model Based Examination

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ABSTRACT

Objective: This research was carried out to determine the relationship between college women's transtheoretical model stages of change and their sexual health knowledge, decisional balance, and self-efficacy towards sexual abstinence behavior.

Methods: The sample of this descriptive study consisted of 559 college women. Data were collected using the Socio-Demographic Form, Stages of Change for Sexual Abstinence, Sexual Health Knowledge Test, Decisional Balance Scale, and Self-Efficacy Scale. The data were analyzed using frequency (n), percentage distributions (%), chi-square test, Mann-Whitney U Test, and Kruskal-Wallis Test.

Results: The mean age of the sample is 19.88 ± 1.42 (Min-Max: 17-24). It was determined that the students who had no sexual experience had higher the internal and external pros perception and self-efficacy scores and lower cons perception scores ($p < 0.05$). The internal and external pros perceptions and self-efficacy of the students in the precontemplation stage were found lower than those in the contemplation stage ($p < 0.05$). At the same time, it was determined that the external pros perceptions of the students in the contemplation stage were lower than those in the action stage ($p < 0.05$).

Conclusion: It was found that the perception of internal and external pros and self-efficacy increased with the progress towards the action stage among the sexual abstinence stages of change. Decisional balance and self-efficacy were found to be important components for the effectiveness of planned sexual health education.

Keywords: Sexuality, sexual health, sex education, transtheoretical model, college women

1. INTRODUCTION

The youth period is considered as the transition stage from adolescence to adulthood (1). Young individuals who did not receive proper and sufficient sexual health education until the university period may engage in risky sexual behaviors such as sexual intercourse without feeling physiologically and psychologically ready, unprotected intercourse, unwanted pregnancies and miscarriages, early marriage, having more than one sexual partner or frequent partner change, having sexual experiences with drug effect due to reasons such as separation from their families, changes in their lifestyles and peer pressure (2,3). When the literature is examined, these risky behaviors are mostly seen in first-year college students (4-6).

In countries where sexuality is seen as taboo and sexual health education is insufficient, it is seen that the method of sexual abstinence is effective in protecting young individuals from sexually transmitted diseases and unwanted pregnancies (7). Most of the studies abroad carry out programs supporting

sexual abstinence (8). For the effectiveness of the programs related to planned sexual health education, factors related to sexual abstinence should be determined.

The Transtheoretical Model (TTM) can provide an opportunity to identify factors associated with sexual abstinence behavior. TTM argues that behavioral change is a process, it will facilitate behavioral change by making appropriate interventions to the change stage of the individual and it is a model with proven effect (9,10). The stages of change, which are the main components of this model, include the stages of pre-contemplation, contemplation, preparation, action, and maintenance, which evaluate the individual's readiness to change behavior. Also, the model includes cognitive and behavioral processes, self-efficacy, and decisional balance regarding the behavior change. Decisional balance includes the perception of pros and cons that affects behavior change (9). Self-efficacy is the confidence of an individual to perform the desired behavior in any situation (11). When the studies

on TTM in the literature were analyzed, it is seen to be used to investigate different health behaviors such as smoking, alcohol and substance addiction, nutrition, physical activity, HIV/AIDS prevention, and cancer screening (10,12,13). There are very few studies evaluating the relationship between sexual abstinence behavior and TTM structures (14,15). In Turkey, there are no studies on this subject. In Turkey, the problems related to sexuality in adolescents and young individuals are not defined sufficiently, and sexual health education is insufficient, which causes limited programs to be made on this subject. To increase the effectiveness of programs aimed at preventing risky sexual behaviors, related factors should be examined and interventions should be made against them. This study was conducted to (a) examine the sexual health behaviors of college women, (b) determine the factors related to the stages of change regarding sexual abstinence, and (c) evaluate the relationship of the stages of change with decisional balance, self-efficacy, and sexual health knowledge levels.

2. METHODS

2.1. Study Design and Setting

The universe of this descriptive research consisted of the first-year female students (N=709) studying at a university in Istanbul in the 2019-2020 academic year at a health services vocational school. Ethics committee approval (20.06.2019-143) and institutional permission were obtained. The sample of the study consisted of 559 students who agreed to participate in the study and filled in the data collection tools.

2.2. Data Collection Tools

Research data were collected online between October 4-11, 2020. Data collection tools were The Socio-Demographic Form, Stages of Change for Sexual Abstinence, the Sexual Health Knowledge Test, Decisional Balance Scale for Sexual Abstinence, and Self-Efficacy Scale for Sexual Abstinence.

2.2.1. Socio-Demographic Form

This form consists of 9 questions including age, marital status, sexual health education status, sexual activity status, and opinion on premarital sexual experience.

2.2.2. Stages of Change for Sexual Abstinence (SCSA)

The stages of change developed by Hulton (2001) in line with the transtheoretical model were described with questions (14). It consists of a 5-choice question that evaluates the stage at which people are including the stages of pre-contemplation, contemplation, preparation, action, and maintenance.

2.2.3. Decisional Balance Scale for Sexual Abstinence (DBSSA)

The scale, which was developed by Hulton (2001) (14) in line with TTM and whose Turkish validity and reliability study was conducted by Karatana et al. (16), consists of three sub-dimensions of sexual abstinence: internal pros, external pros, and cons. It consists of a total of 16 questions including 5 items for the internal pros sub-dimension, 4 items for the external pros sub-dimension, and 7 items for the cons sub-dimension. The scale is a 5-point Likert type that determines the importance of the participants' decisions about sexual abstinence between strongly agree and strongly disagree. High scores for pros sub-dimension and low scores for cons sub-dimension are considered as factors that positively affect sexual abstinence. The Cronbach's alpha coefficients of the Turkish form were 0.61 for internal pros, 0.77 for external pros, and 0.76 for cons sub-dimension (16). For this study, the Cronbach's alpha coefficients were 0.62 for internal pros, 0.76 for external pros, and 0.76 for cons sub-dimension.

2.2.4. Self-Efficacy Scale for Sexual Abstinence (SESSA)

The scale, which was developed by Hulton (2001) (14) in line with TTM and whose Turkish validity and reliability study was conducted by Karatana et al. (16), consists of 6 questions with a 5-point Likert type that evaluate the self-efficacy of individuals in sexual abstinence. High scores indicate high self-efficacy for sexual abstinence. The Cronbach's alpha coefficient was found to be 0.88 for the Turkish form (16), and 0.83 in this study.

2.2.5. Sexual Health Knowledge Test (SHKT)

It is a 40-question multiple-choice test that was developed and whose validity and reliability studies have been conducted by Evcili and Golbasi (2017) to measure the knowledge level of the participants (17). The score to be taken from the test varies between 0-40. It is accepted that the higher the score, the higher the level of sexual health knowledge. The Cronbach's alpha reliability coefficient of the test was reported as 0.88 (17). In this study, it was found to be 0.80.

2.3. Data Analysis

Socio-demographic characteristics were evaluated with mean, standard deviation, frequency (n), percentage distributions (%). Mann-Whitney U, Kruskal-Wallis and chi-square tests were used to compare socio-demographic characteristics and TTM stages of change and perceptions of pros/ cons from sexual abstinence, self-efficacy, and sexual health knowledge scores. The statistical significance level was 0.05.

3. RESULTS

The mean age of the students is 19.88±1.42. It was observed that 98.9% of the students were single and 55.8% did not receive sexual health education. 20.6% of the students had sexual experience starting at the age of 17.98±1.89 (min: 14 – max: 23). It was determined that 65.2% of the students were protected during sexual intercourse, 69.7% preferred condoms as a protection method, 26.1% had an sexually transmitted disease test and 36.5% had sexual intercourse while using alcohol (Table 1).

Table 1. Socio-demographic Information of Students

Variables	Min. – Max.	M±Sd
Age (n=559)	17-24	19.88±1.42
Age of First Sexual Experience (n=115)	14-23	17.98±1.89
	n	%
Marital status(n=559)		
Single	553	98.9
Married	6	1.1
Sexual Health Education (n=559)		
Yes	247	44.2
No	312	55.8
Sexual Activity Status (n=559)		
Yes	115	20.6
No	444	79.4
Protection During Sexual Intercourse (n=115)		
Yes	75	65.2
No	13	11.3
Most of the time	17	14.8
Rarely	10	8.7
Choice of Prevention Method (n=102)		
Contraceptive pill	2	1.9
Condom	71	69.7
Morning-after pill	8	7.8
Withdrawal	21	20.6
Sexually Transmitted Disease Testing Status (n=115)		
Yes	30	26.1
No	85	73.9
Sexual Experience While Using Alcohol (n=115)		
Yes	42	36.5
No	73	63.5

Sd: Standard deviation, Min: Minimum, Max: Maximum, M: Mean

In our study, it was determined that 66.7% of sexually active students who received sexual health education and 63.8% of those who did not receive health education were protected during sexual intercourse and there was no significant difference between the groups ($X^2= 4.70, p>0.05$).

3.1. Factors Related to TTM Sexual Abstinence Decisional Balance, Self-Efficacy and Sexual Health Knowledge Score

When the students' age and their perceptions of pros and cons in sexual abstinence, self-efficacy, and sexual health knowledge scores were compared, it was found that the internal pros, external pros perceptions and self-efficacy of students aged between 17 and 19 were higher than those of those aged 20 and over ($p<0.05$). It was found that married students had higher self-efficacy scores than single students ($p<0.05$). It was found that the self-efficacy and sexual health knowledge of the students who had previously received sexual health education was higher than those who did not ($p<0.05$). It was determined that the students who had no sexual experience had higher the internal and external pros perception and self-efficacy scores and lower cons perception scores ($p<0.05$), and there was no significant difference in sexual health knowledge scores ($p>0.05$) (Table 2).

3.2. Relationships Between TTM Stages of Change for Sexual Abstinence and Decisional Balance, Self-Efficacy and Sexual Health Knowledge

It was determined that 14.7% of the students were at the stages of pre-contemplation, 28.8% contemplation, 44.2% preparation, and 12.3% action.

When sexual abstinence decisional balance, self-efficacy, and sexual health knowledge mean scores were compared according to the stages of change, while a statistically significant difference was found between internal pros, external pros, and self-efficacy scores ($p<0.05$), there was no difference in perception of cons and sexual health knowledge levels (Table 3) (Figure 1).

The internal and external pros perceptions and self-efficacy of the students in the precontemplation stage were found lower than those in the action stage ($p<0.05$). At the same time, it was determined that the external pros perceptions of the students in the contemplation stage were lower than those in the action stage ($p<0.05$) (Table 3).

Figure 1. Comparison of Students' Stages of Change for Sexual Abstinence with Decisional Balance, Self-Efficacy and Sexual Health Knowledge Mean Scores

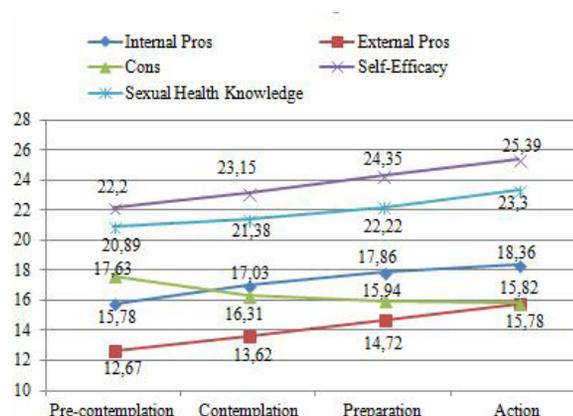


Table 2. Comparison of Students' Sexual Abstinence Decisional Balance, Self-Efficacy and Sexual Health Knowledge Mean Scores and Descriptive Characteristics (N=559)

Characteristics	DBSSA			SESSA	SHKT
	Internal Pros	External Pros	Cons	Mean±SD	Mean±SD
	Mean±SD	Mean±SD	Mean±SD		
Age					
17-19 (n=394)	17.80±3.62	14.77±3.99	15.98±5.36	24.26±4.99	22.09±5.78
20-24 (n=165)	16.36±4.76	13.00±4.65	16.74±5.77	22.75±6.07	21.50±6.30
U/p	-3.80/.000*	-4.19/.000*	-1.42/.155	-2.437/.015*	- .671/.502
Marital Status					
Single (n=553)	17.38± 4.06	14.26± 4.28	16.23± 5.49	23.77± 5.37	21.87± 5.94
Married (n=6)	17.00± 2.00	12.50± 2.58	13.83± 5.03	27.83± 3.12	26.00± 4.73
U/p	-.58/.558	-1.37/.168	-1.08/.279	-2.08/.037*	-1.92/.055
Sexual Health Education					
Yes (n=247)	17.48± 4.02	14.27± 4.20	15.97± 5.11	24.61± 4.84	22.92± 5.95
No (n=312)	17.29± 4.06	14.22± 4.33	16.39± 5.77	23.18± 5.68	21.12± 5.82
U/p	-.724/.469	-.015/.988	-.767/.443	-2.843/.004*	-3.86/.000*
Sexual Activity					
Yes (n=115)	15.01± 4.09	13.16± 4.14	19.51± 5.63	21.36± 6.21	21.94± 5.58
No (n=444)	17.99± 3.80	14.52± 4.26	15.35± 5.12	24.45± 4.94	21.91± 6.03
U/p	-6.86/.000*	-3.42/.001*	-6.75/.000*	-4.93/.000*	-075/.940

DBSSA: Decisional Balance Scale for Sexual Abstinence, SESSA: Self-Efficacy Scale for Sexual Abstinence, SHKT: Sexual Health Knowledge Test, U: Mann-Whitney U Test, * p<0.05

Table 3. Comparison of Students' Stages of Change for Sexual Abstinence with Decisional Balance, Self-Efficacy and Sexual Health Knowledge Mean Scores (N=559)

Variables	PC (n = 82)	C (n = 161)	P (n = 247)	A (n = 69)	Test and p value		Paired Comparison
	Mean ±Sd	Mean ±Sd	Mean ±Sd	Mean ±Sd	χ^2	p	Mann-Whitney U Test
Internal Pros	15.78±5.13	17.03±4.26	17.86±3.67	18.36±2.43	18.78	.000	PC<P, A
External Pros	12.67±4.67	13.62±4.41	14.77±3.99	15.69±3.63	23.76	.000	PC<P, A; C<A
Cons	17.10±7.14	16.31±5.51	15.94±5.27	15.82±3.63	1.57	.664	
Self-Efficacy	22.20±6.18	23.15±6.11	24.35±4.80	25.39±3.49	10.69	.014	PC<A
Sexual Health Knowledge	20.89±6.83	21.38±6.09	22.22±5.44	23.30±5.93	6.69	.082	

PC: Pre-contemplation, C: Contemplation, P: Preparation, A: Action, χ^2 : Kruskal-Wallis test

4. DISCUSSION

This is the first study on sexual abstinence to examine the relationship between the stages of change of the transtheoretical model and decision-making, self-efficacy, and sexual health knowledge. In our study, it was determined that the perception of internal and external pros and self-efficacy scores of the students who were at the pre-contemplation stage of TTM sexual abstinence stages of change were the lowest, and the scores of the students in the action stage were the highest. This result was consistent with the theoretical structure of TTM and the results of TTM studies conducted on different subjects in the literature (9,10). According to the studies in Turkey, the age of first sexual experience was found to be between 16-20 (18-20).

Similar to the literature, it was found that 20.6% of the students had sexual experiences and the mean age of first sexual experience was 17.98±1.89 (min: 14 – max: 23).

In this study, it was determined that 55.8% of the students did not receive sexual health education. When studies in Turkey are examined, most of the college women did not receive sexual health education and have insufficient knowledge levels (19-21). This can result from the limited sexual health education in the Turkish education system, the perspective of the community on sexuality, socio-cultural differences, the influence of religion and culture. The fact that a large proportion of the young population does not know about sexual health education emphasizes the need for education on this subject. Considering that the first sexual experience reduced to the age of 14, it can be suggested to do sexual

health education in the pre-university period to prevent early and risky behaviors.

4.1. Decisional Balance

Decisional balance reveals the perceptions of pros and cons of changing behavior towards sexual abstinence behavior. Pros are defined as the benefits of changing a behavior, while cons are defined as barriers or disadvantages of change. Increasing perceived pros and decreasing perceived cons show that a person is more likely to change behavior (9).

Prat et al. (2012) (22) study on the use of condoms with university students, and Lipschitz et al. (2013) (23) study with female university students on the HPV vaccine, it was stated that the pros perception scores of the students in the action stage were higher than the other stages. In our study, parallel to the literature, it was determined that the pros perception score of sexual abstinence increased from the pre-contemplation stage to the action stage. In line with these results, it can be suggested to include content that will increase the perception of pros in sexual health education programs in terms of the effectiveness of the programs. Increasing the perception of the pros of young people who are at the stage of pre-contemplation and contemplation will make it easier for them to move to the action stage.

In studies examining the perception of cons according to the stages of change, it was found that the cons perception scores of students in the action stage were lower than the other stages (22–25). Similarly, in this study, it was observed that the perception of cons score was the lowest during the action stage. Since the low scores of the cons sub-dimension support sexual abstinence, it can be suggested to prepare content to reduce the perception of cons in sexual health education. In our study, the pros perception was found to be higher in those aged between 17 and 19 compared to those aged 20 and over. In addition, those with no sexual experience had higher pros perception and lower cons perception than those with no sexual experience. These results show that young people who are older and have sexual experiences are at risk in terms of sexual behavior. It is recommended to give priority to these risky groups in sexual health education programs.

4.2. Self-efficacy

Self-efficacy is a key concept in healthy sexual behavior and focuses on the ability to control one's sexual health-related behaviors, to engage in safe sexual behavior, and to choose the right sexual partner (26). Studies show that high self-efficacy prevents risky sexual behaviors (27–29). In studies comparing stages of changes and self-efficacy scores, higher self-efficacy scores were found in the action and maintenance stage (23,25,30). Similarly, in our study, it was determined that the self-efficacy scores increased from the pre-contemplation stage to the action stage. In line with these results, interventions to increase the level of self-efficacy in

sexual health education can be suggested to support sexual abstinence behavior.

In our study, sexual abstinence self-efficacy scores of those who did not receive sexual health education, had sexual experience, and those who were 20 years and older were found to be lower than others. For these reasons, it is important to increase self-efficacy to avoid sexuality before sexual experience and at an early age.

4.3. Sexual Health Knowledge Levels

It is important for young people to acquire correct information, attitude, and behavior about their sexual health. It enables young people to develop their sexual identity, develop healthy and safe sexual behavior, and prevent sexual dysfunctions (31). It is stated in the literature that sexual health knowledge is influenced by family, society, and cultural factors (32,33). In our study, it was found that the sexual health knowledge level of the students was at a medium level (21.92 ± 5.94). 66.7% of the sexually active students who stated that they received sexual health education and 63.8% of those who did not receive sexual health education stated that they were protected during sexual intercourse. The lack of significant difference between the groups may be related to the content and quality of health education. Comprehensive sexual health education programs (34) which is a proven effective program in this area, may be recommended in future studies.

There is no study investigating the relationship between sexual health knowledge levels and stages of change. Although there was no significant difference between the stages of change and sexual health knowledge levels in our study, it was observed that the scores increased from the pre-contemplation stage to the action stage. Sexual health knowledge has an important effect on the healthy sexual attitudes and behaviors of young people (35) and increasing their knowledge level is necessary to protect them from risky sexual behaviors.

5. CONCLUSION

It was determined that the perception of internal and external pros and self-efficacy scores of the students who were at the pre-contemplation stage of TTM sexual abstinence stages of change increased towards the action stage, while the perception of cons decreased. Our study results will form the basis for health education programs. To support sexual abstinence behavior effective sexual health education can be planned to increase pros perceptions and self-efficacy, and to reduce the perception of cons.

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Competing Interests

The author(s) declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

Ethics Committee Approval

The study protocol was approved was obtained from the Ethics Committee of Marmara University (20.06.2019-143).

Restrictions of the Study

The main limitation of the study is that it is limited to university students studying at a foundation and a state university.

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