

Original Paper

Midwives' Views on Virginity Testing: A Cross-sectional Study



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ABSTRACT

Introduction: Several cultural and social factors have influenced virginity testing as a medical procedure. This procedure is performed, but sometimes there is no scientific reason to perform it.

Objective: This study investigated the views of midwives working in Tabriz, Iran, about virginity testing.

Materials and Methods: This cross-sectional study was conducted among 210 midwives using the sociodemographic and a researcher-made questionnaire to assess midwives' views on virginity testing. The samples were selected by random sampling among midwives working in Tabriz City, Iran. The Pearson correlation test, independent t-test, and one-way ANOVA were used to determine the relationship between sociodemographic characteristics and midwives' views on virginity testing.

Results: The Mean±SD age of the participants was 35.25±8.9 years. The overall score of the midwives' view on virginity testing was 206.98, of an attainable range from 55 to 275. There was a significant relationship between the overall score of midwives' views on virginity testing with the variables of age (P=0.033), education level (P=0.001), ethnicity (P=0.012), place of residence (P=0.001), and place of employment (P=0.001). Most midwives (56.2%) believe virginity testing has no therapeutic value and prevention of problems and should not be done, and 59.1% opposed virginity testing motivated by a man's right to impose a healthy virginity condition on marriage. Most participants (81.9%) agreed to perform virginity testing to investigate rape and sexual abuse.

Conclusion: The authorities and the legislators should take the necessary measures to prepare the regulations and provide appropriate training to this group.

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Highlights

- Most midwives agreed with paying attention to the feelings of the virginity testing.
- Most midwives opposed virginity testing motivated by a man's right to impose a healthy condition on marriage.
- Most midwives agreed that the awareness of examiners, especially midwives, about the sociocultural and legal consequences of virginity testing is important.

Plain Language Summary

Several cultural and social factors influence virginity testing as a medical procedure. There are no clear instructions regarding virginity testing at the personal request of applicants and members of the medical staff involved in this examination and the country's medical centers. As a member of the virginity testing team, the midwife has professional and ethical duties. In our country, Iran, midwives face several requests for examination of the hymen and virginity membrane annually, but unfortunately, no university education answers the questions that will arise for this group. On the other hand, these individuals may face many cultural, social, legal, psychological, and moral challenges in relation to performing or not performing this examination. This study showed that most midwives consented to the views of international institutions and organizations regarding women's rights and the prohibition of violence against women concerning virginity testing. They considered it a clear case of violation of women's rights.

Introduction

Virginity testing is defined as an act and process of inspecting the genitals of unmarried girls and women to determine if they have had vaginal intercourse [1]. The primary purpose of this examination is sexual abstinence, delaying sexual intercourse until marriage, and preventing the spread of sexually transmitted diseases and AIDS in various cultures [2]. This examination is often performed in African and Asian countries. The growing number of virginity testing and repair applicants in European countries, including the Netherlands, Sweden, Spain, and Canada, without previous experience with such examinations indicates its globalization and the dominant role of cultural beliefs in accepting the test [3-5].

However, most societies accept virginity as an undeniable value [6]. Virginity testing without medical indication is questionable due to the double standard and violence against women [7]. The prevalence of virginity testing at personal request in some countries has become a matter of life and death due to virginity's connection to the dignity of families and its consequences, such as notoriety, suicide, and honor killing [8, 9]. It has been criticized by human rights organizations [10]. The [World Health Organization \(WHO\)](#) and the [United Nations](#) special rapporteur have banned virginity testing as a form of inhumane,

cruel, degrading, and sexual violence against women. However, this practice continues in many countries, including Iran [11]. Olson et al., in a review study, concluded that virginity testing is not only not good but also will cause physical, mental, and psychological damage to the person being examined [12].

On the other hand, according to the evidence in countries where the hymen is the virginity index, such examinations cause people to have oral sex, anal sex, and genital contact, which is often unprotected and leads to sexually transmitted diseases [13, 14].

However, planning and adopting appropriate policies related to virginity testing as a sociocultural product in any country requires studying. There are no clear instructions regarding virginity testing at the personal request of applicants and medical staff members involved in this examination and the country's medical centers [11].

What seems to be important is that this examination is not done to protect or promote girls' health and is, in fact, a violation of the patient's rights because this examination is often performed without the person's informed consent. The examination result without the person's consent will be told to others, contrary to the principle of patient confidentiality. There may be issues following this announcement that the health system cannot respond to it [14, 15]. As a member of the virginity testing team, the midwife has professional ethical

duties, such as showing respect to the person regarding the examination, preventing psychological injuries, physical and social, protecting individual rights, ensuring legal authorization for all steps, the confidentiality of personal information, understanding the patient's feelings and, if necessary, act as a supporter for the person [16]. It is important that midwives, as individuals involved in this examination, must be aware of the relevant laws in this field to carry out their professional responsibilities and the resulting moral responsibilities [17]. In our country, Iran, midwives face many requests for examination of hymen and virginity membranes annually, but unfortunately, university education does not answer the questions that will arise for this group. Midwives may face many cultural, social, legal, psychological, and moral challenges in relation to performing or not performing this examination. Therefore, the present study investigated midwives' views on virginity testing.

Materials and Methods

This cross-sectional study was conducted on 210 midwives working in private offices, hospitals, health centers, and hospitals affiliated with [Tabriz University of Medical Sciences](#), Tabriz City, Iran, from January to August 2020. The inclusion criteria included midwives living in Tabriz working in one of the health centers, private clinics, or universities who were willing to participate in the study.

The sample size for this study was based on the results of the study of Zeyneloglu et al. [18]. Considering $P=0.65$, $d=10\%$ around p , and $\alpha=0.05$, the sample size was 207 people, and the sample size was 210.

The researcher had to take samples from comprehensive health centers or private clinics; the sampling method in this study was different. Due to the small number of midwives working in universities, these midwives were selected by convenience sampling method; for midwives working in offices, health centers, and hospitals, a simple random method was used. First, the list of midwifery clinics, health centers, and hospitals in Tabriz was determined and then numbered in the order in which the samples were selected randomly. Also, according to the number of midwives working in each center, the sample was randomly selected using [www.Random.org](#) based on the number assigned to each.

Due to the lack of a standard questionnaire in this field, a researcher-made questionnaire was designed based on the questionnaires used by [Robatjazi et al. \[8\]](#), [Gursoy and Vural \[17\]](#), [Zeyneloglu et al. \[18\]](#), and [Simbar et al. \[19\]](#). This questionnaire consists of two main parts.

The first part of the questionnaire was the sociodemographic characteristics, including age, work experience, marital status, occupation, place of work, education, ethnicity, religion, place of residence, and family financial status. Some questions include, "Have you ever been tested for virginity yourself?" "Do you have a single son, brother, daughter, or sister?" and "how much virginity testing have you done so far?"

The second part of the questionnaire had 55 questions (6 dimensions), emotions of the examined people (6 questions about the feelings of the examinees), consequences of virginity testing (11 questions), reasons for midwives' desire to do or not to do virginity testing (11 questions), common causes of virginity testing (9 questions), the appropriate approach to virginity testing (7 questions), and respecting the rights of examinees (11 questions). This questionnaire was scored based on the 5-point Likert scale (totally agree, agree, no opinion, disagree, and totally disagree) with a total score of 55 to 275. Questions 19, 20, 21, 22, 24, 25, 27, 28, and 48 are scored in reverse.

The validity of the questionnaire was assessed using face and content validity by emailing 10 experts, including members of the faculty of midwifery and reproductive health of the country's medical universities, obstetricians, and forensic specialists. The Content Validity Index (CVI) and the Content Validity Ratio (CVR) were calculated according to the [Lawshe table \[20\]](#). CVI and CVR were 0.86 and 0.82, respectively. The reliability of the questionnaire was assessed by retesting for two weeks on 20 employed midwives. The internal correlation coefficient using the Intraclass Correlation Coefficient (ICC) for the questions was calculated at 0.82.

The study data were gathered by referring to private clinics, health centers, and university centers, and comprehensive information on the reasons for conducting the research, benefits, results, confidentiality of data, and how to conduct the research was provided. To comply with the ethical aspects, participation in the study was voluntary, and they were assured that all information would remain confidential with the researcher. Participants could withdraw from the study at any stage. Also, we did not record the participants' identities to protect privacy.

Data analysis was performed using SPSS statistical software, version 21. Descriptive statistics and the Pearson test, independent t-test, and one-way ANOVA were used to analyze data. $P<0.05$ was considered significant.

Results

The sociodemographic characteristics of the participants in this study are given in [Table 1](#). In examining the various dimensions of “emotions of the examined person on virginity testing,” most participants (more than 60%) agreed and totally agreed with considering the emotion of the examinees in virginity testing.

In examining the various dimensions of “emotions of the examined person on virginity testing,” most participants (more than 60%) agreed and totally agreed with considering the emotion of the examinees in virginity testing. Regarding the “consequences of virginity examination” dimensions questions, 40% agreed and totally agreed with the adverse consequences of virginity testing. Regarding the “reasons for midwives’ desire to do or not to do virginity testing,” 56.2% believed that “examining the virginity veil has no therapeutic value or even prevention of the problem and should not be done.” Regarding the “common causes of virginity testing” dimension, in the study of rape and sexual abuse, 29.5% strongly agreed; most midwives believed that one of the most common causes of virginity testing was to investigate rape and sexual abuse. Regarding the dimension of the “appropriate approach to virginity testing,” 45.5% strongly agreed, and 0.5% had opposite option about the question “awareness of examiners, especially midwives, about the cultural, social and legal consequences of virginity testing is important and necessary” ([Table 2](#)).

The Mean±SD of the overall score of the midwives’ view on virginity testing was 206.98±16.58 out of the score range of 159-258 ([Table 3](#)). The variables of age ($P=0.033$), education level ($P=0.001$), place of residence ($P=0.001$), and place of employment ($P=0.001$) had a statistically significant difference with the overall score of midwives’ views towards the virginity testing. Also, there was a statistically significant difference between the emotions of the examined person with the place of residence ($P=0.001$), place of employment ($P=0.013$), and the number of examinations performed by midwives ($P=0.022$). The reasons for midwives’ desire to do or not to do, was significant based on ethnicity ($P=0.018$) and place of employment ($P=0.003$). The variables of the place of employment ($P=0.011$) and personal history of virginity examination ($P=0.001$) were significant with the common causes of virginity testing and the variables of education level ($P=0.001$) and place of residence ($P=0.001$) with the dimension of the appropriate approach to virginity testing. Finally the variables of age ($P=0.001$), an education level ($P=0.001$), place of

residence ($P=0.028$) work history ($P=0.002$), place of employment ($P=0.002$) and the number of virginity testing ($P=0.022$) with respecting the rights of examinees were statistically significant ([Table 4](#)).

Discussion

The present study’s findings indicate that most midwives agreed on “paying attention to the feelings of the examinees about the virginity testing.” This study showed that most participants believed that virginity testing caused physical and psychological pain and a kind of invasion of privacy in the examinee. This is consistent with a statement issued by a group of Denmark forensic experts [21] that considered pain, mental health problems, and disregard for the patient’s rights as the effects of virginity testing.

Most participants believed that virginity testing exacerbates feelings of gender inequality, increases physical and verbal violence, and decreases self-esteem. In a similar study, midwives believed virginity screening and hymen repair were patriarchal elements used to control violence against women [22]. Our result is consistent with them. Most midwives in our study believed that “virginity testing has no therapeutic or even preventive value and should not be done.” In Simbar et al.’s study, the most important reasons for virginity testing were professional performance and economic motivation [19]. Meanwhile, in our research, few midwives performed virginity testing for economic motivation. This difference can be attributed to the different cultural bases of the two studies. Gursoy’s study showed that many examiners disputed a virginity test and said it should not be imposed on them against their will. They also stated that this examination is not only a violation of human rights but also an unpleasant experience for some [17]. The results of our study are in this line.

In the present study, however, many midwives opposed virginity testing for “a man’s right to impose a virginity condition on marriage.” A few participants agreed with this issue, mostly due to the double standards or gender inequalities prevailing in Iranian society. It is approved by different groups of the population [23]. A study in the Philippines showed that men compared women’s personalities and values with their virginity [24]. Most participants agreed to have virginity testing “to investigate rape and sexual abuse.” In Gursoy et al.’s study, most midwives and nurses stated that a person has the right to request an examination, and she cannot be examined for virginity without her consent unless medically necessary. However, one-sixth of the nurses and

Table 1. Participants' sociodemographic characteristics (n=210)

Variables	No. (%) / Mean ± SD	
Age (y)	<30	81(38.6)
	30-40	72(34.3)
	>40	57(27.1)
		35.25±8.9
Education level	Associate	8(3.8)
	Bachelor	130(61.9)
	Masters	45(21.4)
	Doctorate	27(12.9)
Marital status	Single	80(38.1)
	Married	122(58.1)
	Divorced	6(2.9)
	Widow	2(1.0)
Household monthly income for expenses	Income equals expense	148(71.2)
	Income is more than expense	32(15.4)
	Income is less than expenses	28(13.5)
The status of having sisters, brothers and children	Having a son	65(31.1)
	Having a daughter	62(29.8)
	Having a brother	163(77.6)
	Having a sister	104(50.0)
Work experience (y)	9.5±8.1	
Ethnicity	Turk	189(90.0)
	Kurd	7(3.3)
	Fars	14(6.7)
Religion	Shia	206(98.1)
	Sonni	4(1.9)
Place of residence	Urban	204(97.1)
	Rural	3(1.4)
Place of employment	Public hospital	82(39.2)
	Private hospital	50(23.9)
	Health center	10(4.8)
	Office	10(4.8)
	University	57(27.3)

Variables	No. (%) / Mean ± SD
History of virginity examination	57(27.3)
I did not have	46(21.9)
Number of virginity examinations performed	
<10	89(42.4)
10-20	28(13.3)
>20	47(22.4)

midwives agreed that virginity testing could be done for the daughters at the parents' request [17]. In Iran, the examination of virginity requires personal consent, but what seems important here is that in these traditional patriarchal societies, the preservation of women's virginity is not only a sign of the girl's pride but also of great importance for the girl's family [25, 26]. Therefore, the

family in these societies is one of the decision-makers in examining girls' virginity. In our study, participants believed that for virginity testing, families and girls should be consulted to increase awareness, and it is important for examiners, especially midwives, to be aware of the sociocultural and legal consequences of virginity testing. Some participants in the study agreed that virginity test-

Table 2. Midwives' views on virginity testing (n=210)

How much do you agree with the necessity of the following about virginity testing?	No. (%)					
	Totally Disagree	Disagree	No Opinion	Agree	Totally Agree	
Emotions of the examined person	1-Examination of the hymen causes physical discomfort in the person.	15(7.1)	23(11.0)	15(7.1)	91(43.3)	66(31.4)
	2-Examination of the hymen causes psychological distress in the person.	6(2.9)	9(4.3)	14(6.7)	82(39.0)	99(47.1)
	3-Compulsory virginity testing is a violation of a person's privacy.	2(1.0)	6(2.9)	5(2.4)	51(24.3)	146(69.5)
	4-Virginity testing requires respect for the examinee, regardless of the cause or outcome of the examination.	2(3.3)	0(0.0)	8(3.8)	53(25.2)	147(70.0)
	5-It is insulting for a person to examine the hymen and ask for a virginity certificate before marriage.	7(3.3)	16(7.6)	37(17.6)	63(30.0)	87(41.4)
	6-Obtaining a hymen health certificate assures the examinee of hymen health	7(3.3)	18(8.3)	51(24.3)	72(34.3)	62(29.5)
	7-Examination of the hymen causes social deprivation in the person.	17(8.1)	53(25.2)	69(32.9)	56(26.7)	15(7.1)
	8-Virginity testing lowers a person's self-esteem.	6(2.9)	36(17.1)	39(18.6)	93(44.3)	36(17.1)
Consequences of virginity examination	9-Virginity testing causes self-blame in the individual.	5(2.4)	37(17.6)	50(23.8)	74(35.2)	44(21.0)
	10-Virginity testing causes psychological problems (depression) in the person.	5(2.4)	48(22.9)	50(23.8)	59(28.1)	47(22.4)
	11-Virginity testing increases in honor killings.	2(1.0)	32(15.2)	61(29.0)	84(40.0)	31(14.8)
	12-Virginity testing increases physical and verbal violence against the individual.	4(1.9)	26(12.4)	48(22.9)	94(44.8)	38(18.1)
	13-Virginity testing increases suicide attempts.	8(3.8)	30(14.3)	70(33.3)	79(37.6)	23(11.0)
	14-Virginity testing increases the girls' sexual perversions.	11(5.2)	39(18.6)	74(35.2)	62(29.5)	24(11.4)
	15-Virginity testing increases abstinence from marriage.	5(2.4)	36(17.1)	51(24.3)	72(34.3)	46(21.9)
	16-Virginity testing intensifies the sense of gender inequality.	3(1.4)	21(10.0)	27(12.9)	71(33.8)	88(41.9)
	17-Virginity testing causes interference with the examiner.	11(5.2)	40(19.0)	92(43.8)	43(20.5)	24(11.4)

	How much do you agree with the necessity of the following about virginity testing?	No. (%)				
		Totally Disagree	Disagree	No Opinion	Agree	Totally Agree
Reasons for midwives' desire to do or not to do virginity testing	18-Examination of the hymen has no therapeutic value or even prevention of the occurrence of the problem and should not be done.	12(5.7)	40(19.0)	40(19.0)	56(26.7)	62(29.5)
	19-The hymen should be examined because any sexual intercourse can be detected.	43(20.5)	80(38.1)	60(28.6)	19(9.0)	8(3.8)
	20-Examination of the hymen to receive a certificate of virginity must be done in all girls before marriage.	65(31.0)	65(31.0)	45(21.4)	22(10.5)	13(6.2)
	21-I do a hymen examination because it has value for reproductive-sexual health.	47(22.4)	53(25.2)	46(21.9)	42(20.0)	22(10.5)
	22-I do a hymen examination because it is similar to other medical examinations.	52(24.8)	54(25.7)	45(21.4)	39(18.6)	20(9.5)
	23-I do virginity testing with the motive of defending the rights of girls against their husbands.	47(22.4)	49(23.3)	30(14.3)	60(28.6)	24(11.4)
	24-I do virginity testing with the motive of imposing community custom on midwifery duties.	28(13.3)	61(29.0)	50(23.8)	62(29.5)	9(4.3)
	25-I do virginity testing for economic reasons.	50(24.0)	51(24.5)	67(32.2)	30(14.4)	10(4.8)
	26-I do Virginity testing with the motive of proving the purity and decency of girls.	39(18.6)	41(19.5)	70(33.3)	49(23.3)	11(5.2)
	27-I do virginity testing motivated by a man's right to impose a virginity condition on marriage.	77(36.7)	47(22.4)	53(25.2)	27(12.9)	6(2.9)
28-I do virginity testing motivated by society's belief in the necessity of a girl's virginity.	43(20.5)	49(23.3)	40(19.0)	59(28.1)	19(9.0)	
Common causes of virginity testing	29-I do virginity testing before abused or unaccompanied girls stay in welfare centers.	18(8.6)	52(24.9)	62(29.7)	50(23.9)	27(12.9)
	30-I do virginity testing because there is no bleeding at the first vaginal penetration.	15(7.1)	33(15.7)	37(17.6)	91(43.3)	34(16.2)
	31-I do virginity testing because of possible damage to the hymen during premarital sex.	25(12.0)	30(14.4)	39(18.8)	80(38.5)	34(16.3)
	32-I do virginity testing before transvaginal and vestibular surgeries.	12(5.7)	21(10.0)	41(19.5)	83(39.5)	53(25.2)
	33-I do virginity testing to investigate rape and sexual abuse.	4(1.9)	14(6.7)	20(9.5)	110(52.4)	62(29.5)
	34-Virginity testing is done to check for possible damage to the hymen following trauma and masturbation.	13(6.2)	24(11.4)	36(17.1)	82(39.0)	55(26.2)
	35-I do virginity testing to get a full dowry if I am a virgin in case of divorce.	13(6.2)	21(10.0)	54(25.7)	67(31.9)	55(26.2)
	36-I perform virginity testing to marry a girl without the father's permission because she is not a virgin.	23(11.0)	35(16.7)	100(47.6)	33(15.7)	19(9.0)
An appropriate approach to virginity testing	37-I do virginity testing because the spouse's name is removed from the birth certificate in case of divorce if she is a virgin.	11(5.2)	22(10.5)	37(17.6)	92(43.8)	48(22.9)
	38-It is important to support the examiner after examinations that result in the girl not being a virgin.	2(1.0)	3(1.4)	51(24.5)	76(36.5)	76(36.5)
	39-Planning should be done by the relevant authorities to monitor the examination and its consequences.	2(1.0)	5(2.4)	46(21.9)	87(41.4)	70(33.3)
	40-There must be instructions for virginity testing.	6(2.9)	4(1.9)	41(19.5)	97(46.2)	62(29.5)
	41-Virginity testing requires the training of experts.	2(1.0)	3(1.4)	13(6.2)	107(51.0)	85(40.5)
	42-For virginity testing, families and girls should be consulted to raise awareness.	3(1.4)	1(0.5)	10(4.8)	112(53.3)	84(40.0)
	43-Awareness of examiners, especially midwives, about the sociocultural and legal implications of virginity testing is important.	1(0.5)	3(1.4)	12(5.7)	98(46.7)	95(45.5)
	44-Declaring virginity testing illegal at personal request should be considered by law.	2(1.0)	8(3.8)	62(29.5)	76(36.2)	62(29.5)

	How much do you agree with the necessity of the following about virginity testing?	No. (%)				Totally Agree
		Totally Disagree	Disagree	No Opinion	Agree	
Respecting the rights of examinees	45-Girls have the right to refuse virginity testing.	0(0.0)	5(2.4)	14(6.7)	87(41.4)	104(49.5)
	46-Examination of the hymen without the person's consent is prohibited by law.	1(0.5)	2(1.0)	9(4.3)	77(36.7)	121(57.4)
	47-Virginity testing requires permission from the client.	0(0.0)	1(0.5)	5(2.4)	69(32.9)	135(64.3)
	48-It is unnecessary to obtain permission to report the result to other people (spouse, family, and spouse ,...).	60(28.6)	37(17.6)	9(4.3)	49(23.3)	55(26.2)
	49-Virginity testing requires an examination request from the examinee (excluding children and the mentally retarded).	0(0.0)	4(1.9)	11(5.2)	88(41.9)	107(51.0)
	50-Legitimacy testing requires a minimum age to prevent the screening of young girls.	2(1.0)	3(1.4)	50(23.8)	71(33.8)	84(40.0)
	51-Privacy is required for virginity testing.	0(0.0)	2(1.0)	4(1.9)	53(25.2)	151(71.9)
	52-In virginity testing, it is necessary to facilitate referral to forensic medicine.	2(1.0)	8(3.8)	37(17.6)	75(35.7)	88(41.9)
	53-It is necessary to provide virginity testing before marriage at your request, but be sure to report the result of the examination at your request.	3(1.4)	5(2.4)	19(9.0)	94(44.8)	89(42.4)
	54-Virginity testing requires communication between different medical centers and forensic medicine in cases of rape.	0(0.0)	2(1.0)	13(6.2)	100(47.6)	95(45.2)
	55-Virginity testing requires accreditation of certificates issued by medical centers or private offices outside forensic centers.	1(0.5)	5(2.4)	26(12.4)	93(44.3)	85(40.5)

ing should be considered by law at its own request and is illegal. Therefore, it seems that since virginity testing is recognized worldwide as an act against human rights and violence against women, national and international law should take this issue into account in formulating its programs. Christianson et al. [27] showed in their study that the majority of midwives participating in the study considered unexplained virginity testing to be a form of violence against women, and only a small percentage of them agreed to perform virginity testing.

According to the literature, no study investigated the relationship between the sociodemographic characteristics of people and their views. In the present study, some personal characteristics are significantly related to midwives' views. It seems that people's personal and social characteristics are rooted in their culture, which has influenced their views with the effects of people's attitudes.

One of the limitations of this study was people may not have had enough time to answer the questionnaire questions; the questionnaire was given to them, and after one day, the people were contacted again, and the questionnaires were handed over to them.

Table 3. Overall score of midwives' views and its dimensions regarding virginity testing (n=210)

Variables	Mean±SD	Median (P25%-P75%)	Obtained Score
Overall score (55-275)	206.98±16.58	209(194-218)	159-258
Emotions of the examined person (6-30)	25.03±3.37	26(23.75-28)	12-30
Consequences of virginity examination (11-55)	38.11±7.06	38(34-43)	15-51
Reasons for midwives' desire to do or not to do virginity testing (11-55)	36.76±5.49	36(33-42)	21-47
Common causes of virginity testing (9-45)	31.46±7.07	33(28-35)	9-45
An appropriate approach to virginity testing (7-35)	28.87±4.06	28(26-32)	13-35
Respecting the rights of examinees (15-55)	46.66±4.37	47(43-51)	30-55

Table 4. The relationship between sociodemographic characteristics and the midwives' views and its dimensions regarding virginity testing (n=210)

Variavbles	Overall Score	Emotions of the Examined Person	Consequences of Virginity Examination	Reasons for Midwives' Desire to Do or not to Do Virginity Testing	Common Causes of Virginity Testing	An Appropriate ap-proach to Virginity Testing	Respecting the Rights of Examinees
Age*	0.033	0.871	0.138	0.893	0.819	0.228	0.001
Education level**	0.001	0.485	0.038	0.055	0.816	0.001	0.001
Ethnicity**	0.012	0.907	0.037	0.018	0.675	0.999	0.496
Religion**	0.247	0.752	0.396	0.315	0.514	0.095	0.396
Place of residence***	0.001	0.001	0.389	0.308	0.148	0.001	0.028
Marital status**	0.675	0.913	0.379	0.166	0.502	0.095	0.062
Sufficient household income**	0.581	0.242	0.884	0.902	0.191	0.053	0.384
Work experience*	0.882	0.781	0.138	0.893	0.819	0.539	0.002
Place of employment**	0.001	0.013	0.106	0.003	0.011	0.618	0.002
History of virginity examination***	0.125	0.416	0.728	0.115	0.001	0.137	0.229
Number of virginity testing performed*	0.309	0.022	0.054	0.001	0.248	0.055	0.022
Having a son***	0.050	0.068	0.535	0.844	0.143	0.722	0.069
Having a daughter***	0.945	0.514	0.349	0.237	0.345	0.539	0.247
Having a brother***	0.494	0.080	0.001	0.202	0.129	0.594	0.275
Having a sister***	0.685	0.122	0.613	0.302	0.972	0.184	0.006

*The Person correlation test (the value of r for the correlation of midwives' views with people's age was 0.64 and with work experience was -0.01.), **one-way ANOVA; ***The independent t-test.

The results showed that the midwives had a proper view of virginity testing and considered it a violation of women's rights. Therefore, health system interventions should be aimed at improving the monitoring of the examination process and preventing adverse consequences in cases of negative test results. Community empowerment to prevent violence against women and comprehensive training of specialists for correct diagnosis and providing appropriate advice familiar with legal and personal laws should also be considered. In addition, emphasizing the training of the groups involved in this examination can reduce the psychological and physical effects caused by this examination.

Ethical Considerations

Compliance with ethical guidelines

This study was approved by the Ethics Committee of the Research Center for Ethics and Medical Law of [Shahid Beheshti University of Medical Sciences](#) (Code: IR.SBMU.RETECH.REC.1399.490). Informed written consent was obtained from all participants.

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Authors' contributions

Conceptualisation, study design, data interpretation and drafting of the manuscript: Somayyeh Naghizadeh, Mehri Robatjazi, Mahmoud Abbasi, and Azam Mohammadi; Data acquisition, critical revision of the manuscript for important intellectual content: Somayyeh Naghizadeh, Azam Mohammadi, and Mehri Robatjazi; Statistical analysis: Somayyeh Naghizadeh and Azam Mohammadi; Supervision: Mahmoud Abbasi and Mehri Robatjazi; Final approval: All authors.

Conflict of interest

The authors declared no competing interests.

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