



DOI: 10.5505/anatoljfm.2023.75537

AJFAMED 2023;6(3):147–153

The Relationship between Health Belief Model and Cervical Cancer Screening

Yasemin Doğan Kaya,¹ Arzu Uzuner²¹Jandarma Ustegmen Rahim Celik Family Health Center, İstanbul, Türkiye²Department of Family Medicine, Marmara University, İstanbul, Türkiye

ABSTRACT

Objectives: The aim of the study is to determine the effect of health beliefs and knowledge levels on cervical cancer screening.

Methods: This is a cross-sectional-analytic study. It was carried out at Quran courses in the Sultanbeyli District of İstanbul between February 2019 and July 2019. All women aged between 18 and 65 who participated in the training and agreed to participate in the study were recruited. A sociodemographic and reproductive health information survey form and a test for detection of knowledge level, the “Cervical Cancer and Papanicolaou (PAP)-Smear Test Health Belief Model Scale” were applied.

Results: A total of 282 participants, the mean age was 43.3±12.4 years. The frequency of having a PAP-smear test was 113 (41.9%). The barriers subscale scores of the participants who had not been tested for cervical cancer were higher than those who had been tested (39.0±10.5 vs. 34.2±7.9, p=0.002).

Conclusion: In our study, the PAP-smear test rate was low, but this rate was higher in women with high education levels. It is expected that mortality and morbidity will decrease while avoiding barriers with the help of trainings to increase the level of knowledge and awareness.

Keywords: Cancer screening test, cervical cancer, health belief model



Please cite this article as:
Doğan Kaya Y, Uzuner A. The Relationship between Health Belief Model and Cervical Cancer Screening. AJFAMED 2023;6(3):147–153.

Address for correspondence:

Dr. Yasemin Doğan Kaya,
Jandarma Ustegmen Rahim
Celik Family Health Center,
İstanbul, Türkiye

Phone: +90 506 773 42 48

E-mail:
dryaseminkaya@gmail.com

Received Date: 27.01.2022

Revision Date: 23.06.2022

Accepted Date: 19.12.2023

Published online: 29.12.2023

©Copyright 2023 by Anatolian
Journal of Family Medicine -
Available online at
www.AJFAMED.org

OPEN ACCESS



This work is licensed under a Creative
Commons Attribution-NonCommer-
cial 4.0 International License.

INTRODUCTION

Cervical cancer is one of the most prevalent cancers in the world.^[1] According to the World Health Organization, cervical cancer represents 6.6% of all women cancers, with an estimated 570000 new cases in 2018 and is the fourth-most common cancer and is one of the 10 most common types of cancer in women in Turkey.^[1,2] Human Papilloma Virus (HPV) is a factor in 99.7% of cervical cancer cases.^[3] HPV is a sexually transmitted infection agent. Polygamy, early onset of sexual activity, increased smoking, low rate of Papanicolaou (PAP)-smear test, and low socio-economic status are important risk factors.^[4] The most significant risk factor is never being screened for cervical cancer. A single negative PAP smear reduces cancer risk by 45%, and nine negative PAP smears taken throughout life reduce this risk by 99%.^[5]

Screening programs have been reported to be effective in reducing mortality caused by cervical cancer.^[6-8] In Turkey, PAP-smear and HPV DNA testing (co-test) are being provided in Family Health Centers and Cancer Screening Centers all around the country as a part of the National Cancer Screening Program carried out by the Department of Combating Cancer of the Turkish Ministry of Health since 2014.^[5] Within the framework of this program, it is aimed at screening 30- to 65-year-old women once every 5 years for cervical cancer.

The awareness and knowledge level of cervical cancer are reported to be important factors in requesting screening services.^[9] Studies conducted in our country and in many countries have reported that women had low awareness of cervical cancer and cancer screening and that misinformation or inadequate information about health beliefs was the most important barrier to screening.^[10-14]

In a primary care setting, it is important to know the characteristics of the target population to plan and achieve the goals of preventive health-care services.^[2,4] The Ministry of Health planned to increase awareness among women through local trainings provided by health workers in community health Centres as an activity of “The National Cervical Cancer Screening Awareness Month” realized in January 2019. In Sultanbeyli, which is a distant district of Istanbul, these trainings were performed in Quran courses of the municipality that many women have already been participating. These trainings were an opportunity to investigate the knowledge level and health beliefs of the participant women about cervical cancer and their effects on cancer screening.^[11-13]

The aim of the study is to determine the effect of health beliefs and knowledge level on cervical cancer screening during structured group trainings performed in Istanbul Sultanbeyli District.

METHOD

This cross-sectional study was carried out in 29 courses in Sultanbeyli that accepted to give permission to the training from forty Quran courses in January 2019. Inclusion criteria were being 18–65 years of age, having no communication disability, and being a Turkish speaker. The participants’ screening rate, their health beliefs on cervical cancer, and the effect of health beliefs on cervical cancer screening rate were the primary outcomes of the study.

A sociodemographic information survey form, including questions about reproductive history and cervical cancer screening, is used to gather sociodemographic data for the “Cervical Cancer and PAP-smear Test Health Belief Model Scale” to assess the health beliefs of the participants, and a query form containing a total of 15 expressions prepared by the authors based on the presentation content is used for the evaluation of knowledge applied by the participants. The questionnaires were fulfilled by the face-to-face interviewing method for illiterate women; the others completed the questionnaires by themselves.

Cervical cancer and PAP-smear test health belief model scale: This scale was developed by Champion for breast cancer and mammography; it was adapted to cervical cancer and the PAP-smear test; and a Turkish validity and

reliability study was conducted by Güvenç et al. in 2010.^[15,16] It consists of 35 items and five main dimensions, and the method of five-point Likert-type scaling (strongly disagree (1), disagree (2), neutral (3), agree (4), totally agree (5)) was used in the evaluation of the scale. Each dimension of the scale is evaluated separately and scored, not combined into a single total score. A score equal to the number of subscales is obtained for each individual. Increased scores indicate increased sensitivity, seriousness, motivation, and benefit perception, which are positively related to Pap-Smear screening behavior; the high barrier perception score is negatively related.^[16]

The sample size was calculated as 265 women based on a confidence level of 97%, a PAP smear screening frequency estimated at 50.0%, confidence limits of $\pm 5\%$, and a design effect of 1.0. All the women who accepted to participate and fulfilled the criteria were recruited for the study.

The SPSS 23.0 package program was used for the data analysis. Frequency, percentage, mean, standard deviation, median, minimum, and maximum were used as descriptive statistical analyses for sociodemographic data. An independent t-test was used for comparing categorical and continuous variables in the analysis of normally distributed data. A binary logistic regression test was used to evaluate the effect of categorical and/or continuous variables on HPV screening status. Statistical significance is accepted as $p < 0.05$.

RESULTS

A total of 282 women participated in the study; their mean age was 43.4 ± 12.4 years, and their mean income was 2157.4 ± 1087.5 TL. The gynecologic-obstetric characteristics of the participants suggest that 123 (51.0%) of them had regular menstruation and 96 (34.0%) were in menopause; the prevalence of cesarean section, abortion, curettage history, and history of 18 years old and younger pregnancy were 66 (26.8%), 127 (54.3%), 34 (27.2%), and 72 (28.6%), respectively. The rate of first sexual intercourse of the participants at 16 years old and below was 81 (31.9%). The most commonly used modern contraceptive method was the intrauterine device, with 33 (18.2%). Other sociodemographic and gynecologic-obstetric features are summarized in Table 1.

The frequency of having a PAP smear test among all participants was 113 (41.9%), and the frequency of having a PAP smear test among participants with an active sexual life was 74 (45.7%). The frequency of the PAP-smear test was higher in participants with high school and above education than in those with secondary school and below (28 [80.0%] vs. 98 [46.4%], $p = 0.003$). On the other hand, no difference was found in the frequency of PAP smear test-

Table 1. Sociodemographic and gynecologic-obstetric characteristics of the participants

	n (%)
Marital status (n=274)	
Married	254 (92.7)
Single	16 (5.8)
Divorced	4 (1.5)
Educational status (n=254)	
Illiterate	70 (27.5)
Primary and secondary school	149 (58.7)
High school and above	35 (13.8)
Employment status (n=277)	
Employment	22 (7.9)
Unemployment	250 (90.3)
Retired	5 (1.8)
	Mean±SD
Menarche age (years)	13.8±1.4
Menopause age (years)	46.8±5.1
Age of first intercourse (years)	19.1±3.3
Age of first pregnancy (years)	20.6±3.9
The number of live children	3.3±1.6
	Median (min-max)
The number of pregnancies	4.0 (0.0–14.0)

ing between married and single participants (106 [43.6%] vs. 4 [20.0%], $p=0.057$). In addition, there was no difference in terms of PAP smear test frequency between participants with employment history and those who were housewives (10 [40.0%] vs. 102 [42.3%], $p=0.499$). The age groups were categorized into three groups: 30–39 age, 40–49 age, and 50–65 age; the screening rates were 20 (33.9%), 42 (57.5%), and 43 (51.7%), respectively. When evaluated across age

groups, the 40–49 and 50–65 age groups had a higher screening frequency than the 30–39 age group ($p=0.009$ and $p=0.017$, respectively). In terms of gynecological characteristics, the frequency of HPV-tested participants were higher in menopausal women compared to non-menopausal ones (48 [51.1%] vs. 65 [36.9%], $p=0.028$); in women with irregular menstruation compared to women with regular menstruation (56 [57.7%] vs. 41 [42.3%], $p=0.033$). There was no statistically significant difference between those who had heard about cervical cancer before in terms of whether they had been tested or not tested (107 [42.8%] vs. 143 [57.2%], $p=0.407$). Subscale scores of cervical cancer and the PAP-smear Test Health Belief Model Scale according to screened to the participants for HPV are summarized in Table 2.

According to the comparison of the participants' sociodemographic and health characteristics in terms of the health belief model, being literate makes a difference in terms of barriers and seriousness subscales. Illiterate participants had a higher barriers score ($40.7±9.8$ vs. $35.8±9.3$, $p=0.004$) and seriousness score than literate ones ($24.3±7.6$ vs. $21.2±8.3$, $p=0.018$). The seriousness score was higher in married participants than single ones ($22.3±8.1$ vs. $15.2±6.5$, $p=0.005$). Barriers subscale scores were higher in unemployed participants than employed ones ($38.0±9.7$ vs. $31.4±9.9$, $p=0.039$), in menopausal women than non-menopausal ones ($40.5±9.5$ vs. $36.2±9.8$, $p=0.015$), and in participants with a history of vaginal delivery than women with no history of vaginal delivery ($38.7±9.3$ vs. $34.3±10.9$, $p=0.025$). Participants who had only a cesarean section had lower scores for seriousness ($17.2±8.8$ vs. $23.3±7.9$, $p=0.002$), sensitivity ($5.9±3.1$ vs. $7.4±2.9$, $p=0.031$), and health motivation subscales ($7.5±3.7$ vs. $9.2±3.5$, $p=0.036$) than the participants who had both a cesarean section and a vaginal delivery history. Comparing those who had gynecological examination in the last year and those who

Table 2. Subscale scores of Cervical Cancer and PAP-smear Test Health Belief Model Scale according to screened for HPV of the participants

	Screened for HPV (n=113)		Not screened for HPV (n=169)		p
Benefit motivation	84 (74.3)	30.7±8.7	128 (75.4)	30.2±8.6	0.672
Barriers	54 (47.8)	34.2±7.9	97 (57.4)	39.0±10.5	0.002
Seriousness	81 (71.7)	21.6±8.5	109 (64.5)	22.3±7.8	0.572
Sensitivity	92 (81.4)	7.5±3.1	122 (72.2)	7.1±2.9	0.420
Health motivation	94 (83.2)	9.3±3.6	126 (74.6)	8.8±3.2	0.344

HPV: Human papilloma virus.

Data is presented as n (%) and mean±standard deviation.

Independent sample t-test.

did not have, participants with a history of examination in the last year had a higher score in the health motivation subscale (10.1 ± 3.3 vs. 8.6 ± 3.3 , $p=0.001$) and a lower score in the barriers subscale (34.7 ± 9.5 vs. 40.6 ± 9.5 , $p=0.004$). Participants who heard about cervical cancer previously had a higher score in the benefit-motivation subscale than participants who did not hear it ever (30.8 ± 8.6 vs. 25.3 ± 8.3 , $p=0.021$). Participants who were willing for HPV vaccination had a higher scores of the benefit-motivation (32.1 ± 8.6 vs. 28.1 ± 8.8 , $p=0.001$) and seriousness subscales (23.1 ± 8.2 vs. 20.7 ± 7.9 , $p=0.044$) than the participants who were not. Barrier subscale items according to those who had screening and those who did not have screening are summarized in Table 3.

The factors that effects HPV screening status were analyzed by binary logistic regression. The model included age, education level, number of pregnancies, menopause status,

benefit motivation score, barriers score, seriousness score, sensitivity score, and health motivation score. The relationship between PAP-smear test status and participants' characteristics is summarized in Table 4.

DISCUSSION

The frequency of being screened for cervical cancer varies between countries. In our study, the frequency of being screened at least once among participant women was 49.3%, consistent with the literature. The frequency of screening in various studies conducted in our country varies between 12 and 51%.^[10-12] In a review performed by Gakidou et al. the frequency of cervical cancer screening in 57 countries was evaluated.^[17] While the average screening frequency in developing countries was 19%, in developed countries, it was reported as 63%. The low frequency of screening in our study can be attributed to the predominance of participants with low education levels.

Table 3. Barrier subscale items according to those who had screening and those who did not have screening

Barrier subscale	Screened for HPV (n=133)		Not screened for HPV (n=169)		p
Concern about bad outcome	99 (74.4)	2.5±1.3	145 (85.8)	2.5±1.3	0.972
Not knowing the procedure to be performed	100 (75.2)	2.3±1.3	140 (82.8)	2.6±1.3	0.087
Not knowing where the procedure will be performed	98 (73.7)	2.4±1.3	137 (81.1)	2.9±1.4	0.010
Being ashamed to show her private areas	100 (75.2)	3.1±1.3	142 (84.0)	3.3±1.4	0.200
Waste of time	96 (72.2)	2.1±1.1	140 (82.8)	2.6±1.1	0.002
Painful procedure	95 (71.4)	2.1±1.1	138 (81.7)	2.6±1.0	0.001
Negative behaviour of health personnel	95 (71.4)	2.1±1.1	137 (81.1)	2.5±1.1	0.034
Neglecting/inability to remember	97 (72.9)	3.1±1.3	143 (84.6)	3.1±1.3	0.691
Having more important problems	96 (72.2)	2.2±1.2	140 (82.8)	2.5±1.3	0.170
Being older age	96 (72.2)	2.0±1.1	134 (79.3)	2.3±1.2	0.081
Limitation of accessibility	99 (74.4)	2.0±1.2	140 (82.8)	2.6±1.3	0.000
If destined, smear will not prevent it	99 (74.4)	2.5±1.4	145 (85.8)	2.6±1.4	0.680
Gender of operator doctor	74 (55.6)	3.3±1.6	122 (72.2)	3.6±1.5	0.325
Whether or not the procedure has a fee	92 (69.2)	2.2±1.3	131 (77.5)	2.2±1.2	0.835

HPV: Human papilloma virus.
Data is presented as n (%) and mean±standard deviation.
Independent sample t-test.

Table 4. The relationship between PAP-smear test status and participants' characteristics

	B	SE	95% CI	Exp (B)	p
Age	0.074	0.033	1.010–1.148	1.077	0.024
Barrier subscale score	-0.113	0.031	0.840–0.949	0.893	<0.001

Binary logistic regression model: Age, education level, number of pregnancies, menopause status, benefit motivation score, barriers score, seriousness score, sensitivity score, health motivation score.
CI: Confidence interval.

The fact that the only statistically significant parameter between the participants who had and did not have screenings was the educational level; the frequency of screening was higher in those with high school and over educational level. In the studies conducted in our country, the high level of education is reported as the most critical parameter affecting screening.^[11,12] In a meta-analysis by Damiani et al. investigating the relationship between the frequency of breast cancer and cervical cancer screening and education, addressing 10 cross-sectional studies, it was reported that women with the highest education level were 96% more likely to have at least one PAP-smear test over a 3-year period than those with the lowest education level.^[18]

In our study, women with irregular menstruation periods and women in menopause had more prevalent PAP-smear tests. It is thought that the perception of having disease is an essential for patients seeking health care. Furthermore, this is a reason for applying to a health-care center or a hospital. The other factor can be that post-menopausal period complications and/or advanced age provide for regular gynecological control. These reasons are a good opportunity to suggest the test to doctors and being aware for the patients about the test. Koç et al. reported in their study about the impact of education and healthy lifestyle behaviors that inadequate health-seeking behaviors are one of the barriers to PAP-smear screening.^[19] Yanikkerem et al. support that advanced age is a reason for having tests in their study.^[20]

The "Cervical Cancer and PAP-smear Test Health Belief Model Scale" was created to help health professionals develop more effective screening programs taking into account women's sociocultural status and health beliefs.^[16] In our study, only the barriers subscale scores were higher among participants who had and did not have a test. The leading barriers were: "do not know where the procedure will be performed," "considering this a waste of time," "the concern that the procedure may be painful," "negative behaviors of health personnel" and "the limited accessibility" in our study. The statements in this subscale provide an understanding of the barriers to screening. Accordingly, it is understood that there are barriers that need to be avoided before women undergo tests. In other studies, the barriers subscale score was similarly high, and the barriers reported were "discomfort and fear of the procedure to be performed," "difficulties in reaching the health center," "fear of bad results," "not knowing where and who is performing the test," and "feeling sick and thinking that the procedure is painful."^[11,12,21] The barriers are similar in the studies. The fact that similar results are still being obtained in these studies conducted for years, especially in the last decade,

may also be explained as an indicator of a lack of and/or inadequate knowledge. While education level did not make any statistically significant difference in any subscale, in illiterate participants, high scores were found in the barrier subscale in this study. In addition, participants who had heard about cervical cancer had a higher score in the benefit-motivation subscale, which includes knowledge-based expressions. Knowledge provides perception and/or awareness in women, which can explain this result. Studies in our country reported that the benefit-motivation score was higher for participants who had heard about cervical cancer, similarly to their study.^[10,11,21] Aldohaian et al. who studied with 450 Saudi women, suggested that knowledge is a leading factor in cervical cancer screening.^[13]

In this study, employed women had a lower barrier subscale score. Being working ensures socio-economic freedom for women and can eliminate the limitations of accessibility. Furthermore, being in a social environment may allow peer education between women and can encourage the changing health behaviors. Some other studies conducted in our country also support our findings.^[10,11,20,22] Participants who remarked that they could be vaccinated if eligible had higher benefit-motivation and seriousness subscale mean scores. This is not a surprising result, as it is expected behavior from people who take care of their health. Married participants care more about cervical cancer detected in our study. Being single may be an excuse for a delay of following up on gynecological health. Furthermore, married women may be more sexually active, may have more complaints about their gynecologic system, or their partner can help remind them of their health control to lead them to regular gynecological controls. These can be an opportunity to have a test or to maintain a healthy life. Marital status is confused in the literature. Studies found different results for non-significant parameter, low barrier, and high sensitivity subscale mean scores.^[11,13,21,23] Furthermore, in the literature, it is reported that being married is one of the factors contributing to health-seeking behavior.^[24-26]

It is possible to reduce the frequency of cervical cancer, which is common all over the world and affects women's lives negatively, with training and effective screening programs.^[19,27] The positive effects of training to increase knowledge and awareness about cervical cancer among women have been shown in many studies.^[19,27,28] Our study was conducted with middle-income and middle-educational-level women. "Information Training on Cervical Cancer and Screening" was offered within the scope of the "Health Improvement Project" of the Ministry of Health of the Republic of Turkey. The effectiveness of training on cervical cancer and screening in our country has been inves-

tigated by many trainers, and the results have been published.^[10-12] Similar studies have been published in different countries during the same period.^[27,28]

In our study, the pre-training evaluation revealed that 95% of the participants had heard of cervical cancer, and 32% knew that it was a sexually transmitted disease. In the study of Aşilar et al., it was reported that 33.7% of participants women received information about cervical cancer and smear tests, 44.1% were aware of smear tests, and 39.7% knew the reason for smear tests correctly.^[11] In the study conducted by Koç et al. with 156 participants, 8.3% reported that they had heard of HPV before, and 58.3% did not know how to protect themselves from the disease.^[19] The studies conducted in countries such as Ghana, Nigeria, and India, which have low screening rates, have reported that the level of knowledge is lacking, and the level of knowledge is increased with various trainings and training materials.^[27-31]

One of its strengths is that it is a field study conducted by reaching women who do not know whether they should have a PAP-smear test. Along with similar studies, it supports the knowledge that women from many segments still need education. Since the content of the study questions not only knowledge and behavior but also belief in the screening method, it is different from other similar studies. The use of the belief scale also illuminates the barriers to the screening program. This should be perceived as another strength of the study. The limitation of the study is that it cannot be generalized to society because it was not conducted with a sample that reflects society.

CONCLUSION

In our study, PAP-smear test frequency was found to be low in line with the literature, and this rate was higher in people with high education levels. There is a need for attempts to identify and remove the barriers to cervical cancer screening with wide-ranging studies. Preventive medicine is a crucial component of primary health care. In this context, it is expected that the level of knowledge and awareness of individuals will increase and mortality and morbidity will decrease with the help of the training to be offered.

Disclosures

Peer-review: Externally peer-reviewed.

Conflict of Interest: The authors state that there is no actual or potential conflict of interest.

Funding: This study is not financially sponsored for the study design, analysis, and interpretation of the data and in the writing of the report. All expenditures were provided by the authors.

Ethics Committee Approval: Approval was obtained from the ethics committee of Marmara University Clinical Studies (Approval date: January 04, 2019, and Approval number: 09.2019.093), and verbal consent were obtained from the participants.

Authorship Contributions: Concept – Y.D.K., A.U.; Design – Y.D.K., A.U.; Supervision – A.U.; Materials – Y.D.K.; Data collection and/ or processing – Y.D.K.; Analysis and/ or interpretation – Y.D.K., A.U.; Literature search – Y.D.K.; Writing – Y.D.K., A.U.; Critical review – Y.D.K., A.U.

REFERENCES

1. World Health Organization. Cervical cancer. Available at: <http://www.who.int/cancer/prevention/diagnosis-screening/cervical-cancer/en>. Accessed July 1, 2019.
2. Başara BB, Güler C, Yentür GK, Birge B, Pulgat E, Ekinci BM. Sağlık Araştırmaları Genel Müdürlüğü. Yayın No: 917 [Article in Turkish]. Ankara: Sağlık Bakanlığı; 2013.
3. Öztürker C, Sönmez G. Endometrium ve serviks kanserlerinde görüntüleme. TRD Sem [Article in Turkish] 2015;3:1–11.
4. Bebiş H, Reis N, Yavan T, Bayrak D, Ünal A, Bodur S. Effect of health education about cervical cancer and Papanicolaou testing on the behaviour, knowledge and beliefs of Turkish women. *Int J Gynecol Cancer* 2012;22(8):1407–12.
5. Köğ İ, Turan T, Karabük E, Karayünlü B, Özgül N, Demir ÖF, et al. Cervical and breast cancer screening program results of Etlik KETEM group. *TAF Prev Med Bull* [Article in Turkish] 2012;11:145–52.
6. Yıldırım D, Gökaslan H. The importance of HPV DNA test in the screening of cervical cancer. *Turk Onkol Derg* [Article in Turkish] 2015;1:1–6.
7. Saslow D, Solomon D, Lawson HW, Killackey M, Kulasingam S, Cain J, et al. American Cancer Society, American Society for Colposcopy and Cervical Pathology, and American Society for Clinical Pathology Screening guidelines for the prevention and early detection of cervical cancer. *Am J Clin Pathol* 2012;137(4):516–42.
8. Demirhindi H, Nazlıcan E, Akbaba M. Cervical cancer screening in Türkiye: A community-based experience after 60 years of PAP-smear usage. *Asian Pac J Cancer Prev* 2012;13:6497–500.
9. Hendry M, Pasterfield D, Lewis R, Clements A, Damery S, Neal RD, et al. Are women ready for the new cervical screening protocol in England? A systematic review and qualitative synthesis of views about human papillomavirus testing. *Br J Cancer* 2012;107:243–54.
10. Bal MD. Evaluation of women having pap smear test by health belief model scale. *Clin Exp Health Sci* [Article in Turkish] 2014;4(3):133–8.
11. Aşilar RH, Köse S, Yıldırım A. Women's knowledge, beliefs and behaviors about cervical cancer and pap smear test. *Türkiye Klinikleri J Nurs Sci* [Article in Turkish] 2015;7(2):102–11.
12. Çankaya S. The effect of training for cervical cancer on the

- information levels, attitudes and behaviour of the women at Quran courses. *J Obstet Gynecol Neonatal Nurs [Article in Turkish]* 2017;14(4):176–81.
13. Aldohaian AI, Alshammari SA, Arafah DM. Using the health belief model to assess beliefs and behaviours regarding cervical cancer screening among Saudi women: A cross-sectional observational study. *BMC Womens Health* 2019;19(1):1–12.
 14. Kirag N. Knowledge, health beliefs and preventive behaviour regarding cervical cancer among Turkish women: A cross sectional study. *J Public Health Berl* 2021;29:239–44.
 15. Champion VL. Instrument refinement for breast cancer screening behaviours. *Nurs Res* 1993;42(3):139–43.
 16. Güvenç G, Akyüz A, Açikel CH. Health belief model scale for cervical cancer and PAP-smear test: Psychometric testing. *J Adv Nurs* 2011;67(2):428–37.
 17. Gakidou E, Nordhagen S, Obermeyer Z. Coverage of cervical cancer screening in 57 countries: Low average levels and large inequalities. *PLoS Med* 2008;5(6):132.
 18. Damiani G, Basso D, Acampora A, Bianchi CB, Silvestrini G, Frisicale EM, et al. The impact of level of education on adherence to breast and cervical cancer screening: Evidence from a systematic review and meta-analysis. *Prev Med* 2015;81:281–9.
 19. Koç Z, Özdeş EK, Topatan S, Çınarlı T, Şener A, Danacı E, et al. The impact of education about cervical cancer and human papillomavirus on women's healthy lifestyle behaviours and beliefs: Using the PRECEDE educational model. *Cancer Nurs* 2019;42(2):106–18.
 20. Yanikkerem E, Selçuk AK, Esmeray N. Women's attitude and beliefs about cervical cancer and PAP-smear test by using the health belief model. *Int J Cancer Clin Res* 2018;5:102–11.
 21. Reis N, Bebiş H, Köse S, Sis A, Engin R, Yavan T. Knowledge, behaviour and beliefs related to cervical cancer and screening among Turkish women. *Asian Pac J Cancer Prev* 2012;13(4):1463–70.
 22. Cetişli NE, Top ED, Işık G. Cervical cancer and PAP-smear test health beliefs and health-promoting lifestyle of women in Turkey. *Int J Caring Sci* 2016;9(2):630–9.
 23. Uysal A, Birsal A. Knowledge about cervical cancer risk factors and pap testing behaviour among Turkish women. *Asian Pac J Cancer Prev* 2009;10(3):345–50.
 24. Hanske J, Meyer CP, Sammon JD, Choueiri TK, Menon M, Lipsitz SR, et al. The influence of marital status on the use of breast, cervical, and colorectal cancer screening. *Prev Med* 2016;89:140–5.
 25. Adam VY, Aigbokhaode AQ. Sociodemographic factors associated with the healthcare-seeking behaviour of heads of households in a rural community in Southern Nigeria. *Sahel Med J* 2018;21(1):31.
 26. Were EO, Buziba NG. Presentation and health care seeking behaviour of patients with cervical cancer seen at Moi Teaching and Referral Hospital, Eldoret, Kenya. *East Afr Med J* 2001;78(2):55–9.
 27. Fung LC, Nguyen KH, Stewart SL, Chen Jr MS, Tong EK. Impact of a cancer education seminar on knowledge and screening intent among Chinese Americans: Results from a randomized, controlled, community-based trial. *Cancer* 2018;124:1622–30.
 28. Ebu NI, Amissah-Essel S, Asiedu C, Akaba S, Pereko KA. Impact of health education intervention on knowledge and perception of cervical cancer and screening for women in Ghana. *BMC Public Health* 2019;19:1505.
 29. Reichheld A, Mukherjee PK, Rahman SM, David KV, Pricilla RA. Prevalence of cervical cancer screening and awareness among women in an urban community in South India: A cross sectional study. *Ann Glob Health* 2020;86(1):30.
 30. Abiodun OA, Olu-Abiodun OO, Sotunsa JO, Oluwole FA. Impact of health education intervention on knowledge and perception of cervical cancer and cervical screening uptake among adult women in rural communities in Nigeria. *BMC Public Health* 2014;14:814.
 31. Rosser JI, Njoroge B, Huchko MJ. Changing knowledge, attitudes, and behaviours regarding cervical cancer screening: The effects of an educational intervention in rural Kenya. *Patient Educ Couns* 2015;98(7):884–9.