

Original Article

Evaluation of the Effectiveness of the Video Prepared to Raise Cervical Cancer Awareness among Women through Social Media: A Quasi-Experimental Research

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Abstract

Background: Cervical cancer, the fourth most common cancer among women worldwide, is largely preventable through awareness and early detection. However, the COVID-19 pandemic disrupted educational efforts and health services, highlighting the need for innovative approaches like informative animation videos shared on social media to raise awareness among women aged 18-65.

Aim: The objective of this study is to increase knowledge and understanding of cervical cancer by distributing an educational animated video about cervical cancer to women via social media platforms. The global COVID-19 epidemic has resulted in significant disruptions to education and hindered access to early detection and treatment of cervical cancer, both internationally and in Turkey.

Methods: This study is quasi-experimental research that compares the pretest-posttest findings of individuals within a single group. The animation film and questionnaire form were disseminated to women via multiple platforms, including WhatsApp, Instagram, and e-mail.

Results: The findings of this study indicate that the instructional animation movie about cervical cancer, which was distributed through social media, successfully enhanced women's awareness of cervical cancer prevention.

Conclusions: Research findings indicate that women can increase their understanding of preventable cancers, particularly cervical cancer, by watching an instructional animated film distributed through social media.

Keywords: Animation video, awareness, cervical cancer, pap smear, social media.

Background

Gynecological cancers have the highest ranking among cancers that affect women. The hierarchy of gynecological malignancies includes cervical, endometrial, and ovarian cancers (Peksoy et al., 2018). The cancer rankings in Turkey have been modified to give priority to endometrial, ovarian, and cervical cancer. According to the GLOBOCAN 2020 data from the Global

Cancer Observatory, cervical cancer ranks as the fourth most common cancer among women globally (The Global Cancer Observatory- All Rights Reserved- November, 2020).

Among the rare cancer-related causes of mortality nowadays is cervical cancer, which may be treated 100% with screening and early diagnosis. Regular cervical cancer screening significantly reduces the risk of

death from cervical cancer in women. Hence, the World Health Organization (WHO) advocates for universal cervical cancer screening across all nations (American Cancer Society 2021; Arbayn et al., 2020; The Global Cancer Observatory 2021; TR Ministry of Health, General Directorate of Public Health 2021). Despite the complete implementation of cancer prevention screening programs by governments, there are numerous barriers that hinder the participation of the intended population in these programs. The primary barriers to overcome are the limited awareness of screening programs and the prevailing attitudes and actions of individuals towards screening. It is crucial to increase knowledge among all women, particularly those at higher risk, about the risk factors, symptoms, protective methods, early detection, and treatment options for cervical cancer (Ozturk & Gursoy 2018).

In the present time of swift technological progress, we greatly depend on technology to consistently collect information about our health and distribute it around our social circle (Bagriacik, Altintas & Vural, 2018). According to the We Are Social 2021 Internet, Social Media, and Mobile Usage Statistics report, the global internet usage rate is 59.5%; however, Turkey has a higher rate of 77.0%. Globally, the average duration of mobile internet usage is 3.5 hours, whereas in Turkey it is somewhat higher at 4 hours. The global and Turkish demographics of social media users reveal that those between the ages of 25 and 34 are the most engaged segment in terms of social media usage (Bulut et al., 2020; Ana et al., 2020; We Are Social USA—A Global, Socially-Led Creative Agency, 2021). Considering the widespread use of the internet worldwide and in Turkey, it is clear that it may be a powerful tool in the field of healthcare, namely for sharing information about preventable diseases and increasing public awareness. With the widespread use of high-speed internet and cellphones, the importance of technology has become prominent again, especially considering the ongoing COVID-19 pandemic. The objective of this study was to evaluate the influence of an animated instructional video on women's well-being and safety. The video's objective

was to maintain the continuity of education and consultation services while increasing awareness about the risk factors, symptoms, protective measures, and screening programs for cervical cancer. Cervical cancer is a preventable disease in women that can be discovered at an early stage.

Methods

The study design and participants: This study is quasi-experimental research that compares the pretest-posttest findings of individuals within a single group. The study cohort comprises females aged 18–65 residing in Turkey. The 2018 TurkStat data reports an average of 33 million women in the age category of 18–65. By calculating the sample size with a known population, it was determined that a minimum of 385 people, namely women, should be attained in order to achieve a 5% margin of error and a 95% confidence level.

Research Hypothesis between the ages of 18 and 65 via social media effectively educates and raises awareness about the disease.

SettingA total of 433 individuals who fit the specified criteria and readily consented to take part in the study from April 1, 2021, to June 1, 2021, were selected as the study sample using the snowball sampling technique. Amidst the COVID-19 pandemic, the questionnaires were disseminated using online platforms such as WhatsApp, Instagram, or email.

Criteria for inclusion;

- Possessing the ability to read and write.
- By utilizing WhatsApp, Instagram, or email.
- Offering to partake in the research as a volunteer.

Criteria for exclusion;

- Completing the questionnaire form with missing information.
- Engaging in the pretest but abstaining from the posttest.

Instruments: The researchers employed an instructional animated video and a pretest-posttest questionnaire form, both of which were developed based on the existing literature.

Questionnaire Form (pretest-posttest): A survey of 32 questions was administered to women, covering socio-demographic data, pregnancy and sexual history, cervical

cancer, pap smear testing, and specific information regarding the HPV vaccine. A comprehensive assessment was conducted, consisting of 27 inquiries, to evaluate the participants' understanding of the risk factors, symptoms, early diagnosis and screening procedures, and protective measures associated with cervical cancer. Every question had three potential answers: yes, no, or I have no idea. To be more explicit, there were a total of 9 questions that specifically focused on the risk factors linked to cervical cancer, 6 questions that specifically dealt with its symptoms, and 12 questions that explored early diagnosis, screening, and protective measures. In addition, two questions were posed to assess the instructive, explanatory animation film. The poll was intended to encompass a grand total of 61 questions.

Informative Animation Video: Professional opinions indicate that the researchers' educational cartoon film provided comprehensive information on several aspects of cervical cancer, including its definition, risk factors, symptoms, protective measures, screening methods, early diagnosis through Pap smear testing, and the HPV vaccine. In accordance with this data, a 4-minute and 35-second educational animated film was created. The video was created through a collaborative effort with proficient graphic designers and educational technologists to carefully choose suitable animated characters. A group of skilled graphic designers narrated the video. After the completion of the video, it was subjected to assessment by specialists in computer instructional technology. Their recommendations were duly considered in order to finalize the film, signifying the conclusion of the video preparation phase.

Data Collection: The research ethics committee gave their approval before the questionnaire and instructional animation movie were uploaded to Google Forms and a link was made. The generated hyperlink was distributed to a total of 10 individuals through an internet-based platform such as WhatsApp, Instagram, or email. Subsequently, a preliminary investigation was conducted, and the various phases of hyperlink implementation were thoroughly examined. Revisions were implemented

based on the input obtained during the initial study, and the hyperlink generated was distributed to all participants using the online platform. The 10 individuals who participated in the pilot trial were excluded from the main study. Upon the participants' initial reading and acceptance of the informed consent, they proceeded to complete the questionnaire form (pretest). Once the participants completed the questionnaire form in its entirety, they proceeded to view the educational animation movie. The pretest was comprised of the questionnaire form that participants completed before watching the instructive animation video. The participants were administered the identical questionnaire form for the second time, specifically to assess the impact of the instructive animation movie. This occurred 15 days after they completed the initial questionnaire (pretest) and viewed the video. The posttest was comprised of the questionnaire form completed by the individuals for the second time.

Ethical Considerations: The study received approval from the University Ethics Committee on March 18, 2021, with the designated identifier 2021/5. The study was conducted in compliance with the ethical principles outlined in the 1964 Declaration of Helsinki. During the study, the participants were provided with information regarding the study's objectives and significance, as well as the potential venues for publishing the study's findings. The language explicitly indicated that the confidentiality of personal data would be upheld. Prior to taking part in the survey, the participants willingly agreed to join the study through the online platform after getting the necessary information. Participants willingly gave their consent by affirming their agreement to participate after reading the informed consent statement before beginning the survey. Participants who declined to give consent for the research were categorized as "no" and were excluded from the study by exiting the system prior to finishing the questionnaire.

Study limitations and strengths: The research included women between the ages of 18 and 65 who were capable of using WhatsApp, Instagram, or email. However, the sample size was limited due to data constraints. The research findings are

confined to the individuals who participated in the study. The study's strength is in using social media as an efficient means of engagement to disseminate an instructive animated movie about cervical cancer and increase awareness among the public regarding this subject. In addition, the study's merits include the provision of the researcher's contact information in the video, as well as fostering a supportive atmosphere for individuals to seek clarification and ask questions about the subject matter.

Data Analysis: The statistical tests employed in this study included chi-squared, one-way analysis of variance, standard deviation, percentage, and the independent sample t-test. The tests were conducted using the Statistical Package for Social Science 20.0 software, and a significance level of $p < 0.05$ was employed to evaluate the outcomes.

Results

The findings indicated the highest attainable values. Out of the total, women constituted 19.6%; 37.2% had bachelor's degrees; 51.5% were married; 54.7% were employed; and 52.6% had sufficient money to meet all their expenses.

Prior to seeing the instructional cartoon, ladies were already aware of the following

information: Of the participants, 58.2% were aware of cervical cancer, 62.1% were knowledgeable about the Pap smear test, 55.7% had heard of the HPV vaccine, and 54.7% were aware of early detection and treatment methods for cervical cancer. Every single participant in the training showed a profound comprehension of cervical cancer, including its early diagnosis and treatment choices, the HPV vaccine, and the pap smear test. Out of the women polled, 44.1% had received a pap smear test before seeing the instructional cartoon, whereas 56.1% did so afterwards. After receiving the training, 86.1% of women expressed their willingness to participate in cervical cancer tests if reminded, as seen in Table 1.

Prior to the COVID-19 epidemic, 56.8% of women obtained their health data from physicians, 43.0% from social media, and 39.3% from the internet. Amidst the epidemic, the percentages decreased to 52.2%, 45.0%, and 40.6%, respectively. Findings: 82.1% of women rated the animated instructional video as informative, 71.1% as easy to understand, and 51.0% as sufficient (Table 2).

The knowledge assessments, including risk factors, symptoms, screening and early diagnosis, and protection against cervical cancer, exhibited statistically significant disparities ($p < .05$) between the pre-test and post-test (Table 3).

Table 1. Distribution of women's knowledge about cervical cancer, pap smear test, and HPV vaccine (N=433)

		Pretest		Posttest	
		n	%	n	%
Do you have knowledge about cervical cancer?	Yes	252	58.2	433	100.0
	No	181	41.8	-	-
Do you have knowledge about the pap smear test?	Yes	269	62.1	433	100.0
	No	164	37.9	-	-
Do you have knowledge about the HPV vaccine?	Yes	241	55.7	433	100.0
	No	192	44.3	-	-
Do you have knowledge about the early diagnosis and treatment of cervical cancer?	Yes	237	54.7	433	100.0
	No	196	45.3	-	-
Have you had a pap smear test?	Yes	191	44.1	243	56.1
	No	242	55.9	190	43.9
I will go to the examination for cervical cancer screening if I	Yes	311	71.8	373	86.1

receive a reminder.	No	122	28.2	60	13.9
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Table 2. Women's sources of information about cervical cancer (N=433)

		n	%
Where did you obtain information about health before the COVID-19 pandemic? *	Midwife/nurse	90	20.8
	Doctor	246	56.8
	Social media	186	43.0
	Internet	170	39.3
	Scientific printed publication	74	17.1
	Congresses and symposiums	24	5.5
	From the social circle	128	29.5
Where do you obtain health information during the COVID-19 pandemic? *	Midwife/nurse	90	20.8
	Doctor	226	52.2
	Social media	195	45.0
	Internet	176	40.6
	Scientific printed publication	75	17.3
	Congresses and symposiums	18	4.1
	From the social circle	130	30.0
What is your opinion about the informative video? *	Informative	355	82.1
	Understandable	308	71.1
	Fluent	221	51.0
	Sufficient	223	51.5

* More than one answer was given.

Table 3. Cervical Cancer Knowledge Level (CCKL) pretest and posttest knowledge level mean scores (N=433)

Cervical Cancer Knowledge Level (CCKL)	Pretest		Posttest			
	Knowledge level mean score		Knowledge level mean score		z	p
	N	Ort.±SS	N	Ort.±SS		
Cervical cancer risk factors	433	3±3,005	433	9±1,522	- 16,890	0.000
Symptoms of cervical cancer	433	1±2,273	433	6±1,079	- 16.362	0.000
Screening and early diagnosis, protection in cervical cancer	433	7±4,328	433	12±2,007	- 16,214	0.000

Wilcoxon test

Discussion

Scientists Wang et al., in China taught 134 women about cervical cancer and the Pap smear test as part of their study. Following that, the women underwent a telephone interview to determine whether they had had a pap smear within the previous year. Prior to the training, the proportion of people who had a pap smear test was 52.5%. After the instruction, the proportion increased to 70.0% (Wang et al., 2010). Lee et al., in 2014, did a research in which they instructed 30 women in the US to have a pap smear exam by sending them a daily message for seven consecutive days. After a period of twenty-three months, the research found that just 23.0% of women had undergone the pap smear test. Abiodun et al., (2014), performed a study in Nigeria, ensuring that 350 women were exposed to a 25-minute film about cervical cancer and screening. In addition, they distributed booklets to the attendees. Prior to the training, a mere 16.9% of women in the experimental group had knowledge of cervical cancer, while a little over 10.3% were aware of cervical cancer screening. All women reported being knowledgeable about both cervical cancer and screening after receiving the training, according to research by Abiodun et al., (2014). Research done by Thompson et al.,

in 2017 revealed that 34.0% of untrained women in the USA, 38.7% of women who just viewed videos, and 53.4% of women who both watched videos and got training had a Pap smear test within 10 months of the application (Tompson et al., 2017). A total of 153 women participated in Kolutek and Aydin's research in Nevsehir. Before the training, 85.6% of the women indicated a lack of awareness about cervical cancer. Following the training, a series of telephone interviews and house visits were carried out over a period of six months. By the conclusion of the 6th month, 84.3% of the female participants had received a pap smear test (Kolutek, Aydin & Avci, 2015). Upon thorough examination of the studies conducted on increasing knowledge of cervical cancer, it is clear that training substantially improves women's levels of awareness. The provision of training plays a pivotal role in fostering women's propensity to get pap smear testing. Harnessing technical capabilities as a tool is a very effective approach to enhancing understanding of diseases that may be addressed via screenings, especially cancers that impact women. Studies in the literature have shown that receiving training on cervical cancer is advantageous for enhancing awareness. The data obtained from the study, after the implementation of

the training film, corresponds with the results presented in the literature.

Thapa's study, including 250 women in Nepal, revealed that this specific woman obtained knowledge about cervical cancer and the Pap smear test from many sources. More precisely, 34.2% of her information was derived from newspapers and media, 26.9% from healthcare experts, and another 26.9% from friends and family (Thapa, 2018). A sample of 450 women participated in a study by Aldohaian et al., (2019), in which they answered questions about where they learned about the Pap smear test. According to Aldohaian et al., 2019, the study found that 59.8% of women gained information from healthcare workers, 23.7% relied on media sources, and 7.8% received information from their families. Zhanga et al., conducted a study on the prevention of cervical cancer via Twitter, a popular social media site. A total of 782 women were contacted, and the frequency of sharing beneficial tweets among individuals was evaluated. The research demonstrated that tweets broadcast by institutions had a greater reach among individuals, emphasizing the advantageous function of social media in the dissemination of cancer prevention information (Zhanga et al., 2019). The research findings are consistent with the information offered in the literature. Women see the social media ecosystem as a source of information among the given replies. Therefore, it was determined that the presence of women on these platforms (WhatsApp, Instagram, and email) should be increased in order to efficiently provide accurate information on gynecological diseases. Moreover, the poll revealed that 86.1% of women expressed their willingness to participate in screening programs if they were provided with reminders pertaining to the diagnosis and screening for cervical cancer. These findings suggest that by specifically reaching out to women via the communication channels they often use, their involvement in screening programs might be increased. When the study participants were solicited for their feedback on the educational animated film we provided them, an overwhelming majority of 95.4% of the female respondents expressed that it was informative, easily understandable, seamless,

and satisfactory. The research unequivocally shows that instructive cartoon movies, which are often shared on social media platforms mostly utilized by women, have a significant impact on increasing their levels of awareness and inspiring them to address the issue.

In a study by Khademolhosseini et al., (2017), a group of 95 women voluntarily participated and received regular training materials about cervical cancer and the pap smear test using Telegram instant messaging services. Each woman got a minimum of six texts each week for one month. The result indicates a significant increase in the average differences in knowledge levels among the participants after the training. In addition, 47.9% (23 out of 48) of the people in the experimental group had pap smear exams after the training. The study found that the results from the first and final tests, which looked at knowledge of cervical cancer risk factors, symptoms, screening, early diagnosis, and protection, were in line with what other research has already found (Table 3).

The importance of the training provided has been shown in several studies (Zhanga et al., 2019; Khademolhosseini et al., 2017).

However, it is clear that there is a need to further improve the levels of women's participation and involvement in training in the current day. Hence, by delivering training via the social media channels often used by women, we can augment their rates of involvement and boost the efficacy of the information communicated. Hence, by focusing on women via the channels they often use, it will amplify their participation in screening programs and substantially elevate their levels of awareness.

Conclusion: The research revealed that the educational animated movie we created on cervical cancer had a beneficial impact on increasing awareness and providing information to women. Research in the literature confirms that the training offered has a crucial effect on boosting women's knowledge of cervical cancer and motivating them to undergo screening and seek early diagnosis. Utilizing technology and informative training films is an efficient method to leverage possibilities and increase

knowledge about illnesses that may be managed via screenings, particularly malignancies that affect women. The recommendations for raising awareness about cervical cancer include creating public service announcements about the Pap smear test and HPV vaccine with the assistance of the Ministry of Health, public institutions, organizations, and the media. Additionally, establishing regular communication with women through social media and other communication tools, as well as displaying informative animation videos on billboards in public areas and computer screens in public transportation vehicles, with the support of local governments, can be effective strategies. Furthermore, it is advisable to create mobile phone applications that include details about cervical cancer screening programs, utilizing the capabilities provided by technological tools. Additionally, it is important to regularly disseminate information to financially disadvantaged women who lack awareness about the topic, regarding the locations where free screening services are available.

It is important to prioritize improving the knowledge of cervical cancer in society in order to facilitate early detection and prevention. One way to do this is by encouraging more people to participate in regular screening programs.

Conclusion and Implications for Nursing and/or Health Policy: The results of the study indicate that women can increase awareness of cervical and other preventable cancers by sharing an animated educational video on social media.

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