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Bonefeld, Rikke Ekkelund; Poulsgaard Frandsen, Anna; Christensen, Jette; Larsen, Thomas; Kahr, Henriette Strøm

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## ORIGINAL RESEARCH ARTICLE

# A walk-in clinic as an alternative approach to reaching non-attenders of the cervical cancer screening program in the North Denmark region—a pilot study

Rikke Ekkelund Bonefeld<sup>1</sup>  | Anna Poulsgaard Frandsen<sup>2</sup>  | Jette Christensen<sup>2</sup> | Thomas Larsen<sup>1,3</sup> | Henriette Strøm Kahr<sup>1,4</sup>

<sup>1</sup>Department of Gynecology and Obstetrics, Aalborg University Hospital, Aalborg, Denmark

<sup>2</sup>Department of Pathology, Aalborg University Hospital, Aalborg, Denmark

<sup>3</sup>Chief Medical Officer at Lillebaelt Hospital, Vejle, Denmark

<sup>4</sup>Department of Gynecology and Obstetrics, Aarhus University Hospital, Aarhus, Denmark

## Correspondence

Rikke Ekkelund Bonefeld, Department of Gynecology and Obstetrics, Aalborg University Hospital, Reberbansgade 15, 9000, Aalborg, Denmark.  
Email: [r.bonefeld@rn.dk](mailto:r.bonefeld@rn.dk)

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## Abstract

**Introduction:** Up to 39% of women in Denmark do not participate regularly in the cervical cancer screening program and initiatives to increase participation are called upon. The primary aim of this study was to describe previous screening history and characteristics of women attending screening in a walk-in clinic. Furthermore, we wanted to investigate barriers to cervical cancer screening.

**Material and methods:** We designed a walk-in clinic that was open 2 days a week from 16.00 to 19.00 h, located in the Departments of Gynecology in the two main hospitals of the North Denmark Region. The main purpose of the clinic was cervical cancer screening and the study period was 5 months. Women who were not eligible for screening or had other health complaints were referred to their general practitioner. The women included in the study, filled out a questionnaire regarding educational and occupational status; their screening history was registered using data from the Danish Pathology Register.

**Results:** During the study period, 255 women visited the walk-in clinic. The final study population consisted of 249 women who met the inclusion criteria. Age range of participants was 23–77 years, with a median age of 45 years. The majority of the participants were currently employed (81%) or students (10%), the remaining being retired (5%) or unemployed (4%). Screening history showed that 138 (55.4%) of the women were on time for the screening or delayed less than 6 months compared to their recommended screening interval. Sixty-one women (24.5%) were delayed >6 months but <2 years. Fifty women (20.1%) were classified as non-attenders, with more than a 2-year delay in their screening. In the group of non-attenders, eight women had never been screened. Of the remaining 42 women, the median time since last screening was 8.2 years (range 5.0–25.3 years).

**Abbreviations:** GP, general practitioner; HPV, human papilloma virus.

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**Conclusions:** Women attending the walk-in clinic tended to be primarily actively working or students (91%). All age groups in the screening population were represented. Screening history showed that 44.6% had not followed the recommended screening program.

## 1 | INTRODUCTION

Cervical cancer is still a major health issue in Denmark, with approximately 350 cases every year, corresponding to an incidence of 12.1 cases/100 000 women, a number that has been constant over the last two decades.<sup>1</sup> Cervical cancer is preventable with cervical screening to detect early incidents and precancerous lesions which can be cured with surgery.<sup>2</sup> In the most recent report from the Danish Quality Database on Cervical Cancer Screening, it is stated that lack of participation in the screening program is the most significant single cause of cervical cancer.<sup>3</sup> Denmark has a well-organized population-based screening program for cervical cancer which is free of charge under the tax-funded healthcare system. All residents eligible for screening receive an invitation and up to two reminders, but they must actively book an appointment with their general practitioner (GP). Human papilloma virus (HPV) vaccination has been offered as part of the national vaccination program for girls since 2009 and was made gender-neutral in 2019 with the aim to increase herd immunity and protect men against HPV-associated types of cancer.<sup>4–6</sup> The latest reports on participation in the cervical cancer screening program show a decreasing screening uptake at 61% (defined as the percentage of women tested within 365 days after the invitation).<sup>3</sup>

It has been reported that 45%–60% of patients with cervical cancer have not been tested as recommended and a Danish study among cervical cancer incidents found a higher cancer stage at time of diagnosis and a higher mortality among non-attenders compared than among attenders.<sup>7–9</sup> A high participation rate is one of the most important factors in decreasing cervical cancer incidence and thus alternative initiatives to increase participation are needed. After-work clinics or mobile units have been proposed but such alternatives have not, to our knowledge, previously been tested.<sup>9</sup>

In this study, we designed a walk-in clinic in which women could get the cervical smear test 2 days a week without a pre-booked appointment and out of normal working hours. We aimed to describe previous screening history and characteristics of women attracted by this alternative to getting the cervical smear test done by their own doctor. Barriers to cervical cancer screening were investigated using a questionnaire.

## 2 | MATERIAL AND METHODS

### 2.1 | Study design

A pilot study combined with a semi-structured questionnaire was conducted over two study periods, 1 May to 30 June 30, and 1 September to 30 November 2018.

### Key message

Proper screening is important to prevent cervical cancer, but participation is decreasing. A walk-in clinic could be an alternative approach to reaching previous non-attenders.

### 2.2 | The walk-in clinic

The walk-in clinic was physically located in the gynecology departments of the two main hospitals in the North Denmark Region: Aalborg University Hospital and The Regional Hospital North Jutland, Hjoerring. The clinic was open 2 days a week, 1 day at each hospital with opening hours from 16.00 to 19.00 h. The clinic was staffed by a resident in obstetrics and gynecology and a nurse or nursing student. The clinic worked on a walk-in basis, serving the patients as they arrived. All patients visiting the clinic signed a consent form and answered a questionnaire before having their cervical smear test done. Before the cervical smear test was performed, the patient's screening history was reviewed using The Danish Pathology Database and only patients eligible for screening (defined as no record of a cervical smear test within the last 2.5 years in women under the age of 50 and 4.5 years in women 50+) had the cervical smear test done. The purpose of the clinic was solely cervical cancer screening and staff were instructed to reject access to women without an invitation for cervical screening or with a cervical smear test within 2.5 years. For other gynecological complaints, the patients were advised to contact their general practitioner for further assessment.

Analysis of the cervical smear followed the 2018 current guidelines and was primarily performed as liquid-based cytology in 23–59-year-old patients and as primary HPV test in patients >59 years. HPV test was also performed in the case of abnormal cytology.

Suitable patients for participation in the study were women from The North Denmark Region aged 23–65 years who had their last cervical smear more than 2.5/4.5 years previously and who had a cervical smear test in the clinic. Women born before 1948 were also invited for a one-time offer for screening.<sup>10</sup> Screening history was categorized as no delay (<6 months), delay (6–24 months) and non-attenders (>24 months).

To raise awareness of the cervical cancer screening program among the target population, press releases were sent to local media and a social media campaign was initiated with short video-clips to be shared on Facebook and other social media sites. The walk-in

clinic was mentioned in the campaign and in the reminders to the women who were delayed in their screening schedule.

## 2.3 | Questionnaire

The questionnaire was designed with the aim of obtaining information regarding age, municipality of residence, educational and occupational background of the women attending the walk-in clinic, and to get insight into the reasons and considerations that made the woman choose the walk-in clinic as an alternative to an appointment with the general practitioner. The women were also asked where they heard of the clinic and a free text-box was inserted at the end of the questionnaire to allow suggestions for increasing participation in the screening program.

Patients filled out the questionnaire directly in REDCap on a tablet upon arrival in the clinic.<sup>11</sup> A nurse was available if they needed help.

Questions were close-ended and it was possible to choose more than one reason for non-adherence and to write an alternative answer if none of the suggested answers was appropriate. Questions and possible answers were based on the findings from focus-group interviews previously published by the Danish Cancer Society.<sup>12,13</sup>

The questionnaire was tested by asking a diverse group of five women to fill it out followed by an interview on their impression of the different questions and whether they had any difficulties answering them.<sup>14</sup>

The questionnaire is attached in Appendix S1.

## 2.4 | Ethical approval

This study was deemed to be exempt from ethical approval after presentation to the Regional Ethical Committee. The study was approved by The Danish Data Protection Agency (Re: 2008-58-0028, internal reference: 2018-75).

## 3 | RESULTS

A total of 255 women visited the walk-in clinic during the study period. Of these, six were excluded due to former hysterectomy ( $n = 1$ ), last screening  $<2.5$  years ( $n = 3$ ), or no exam made ( $n = 2$ ). The final study population was 249 patients. We included two patients in the population older than 65 years for a one-time offer for screening among women born before 1948.<sup>10</sup> A flowchart showing the inclusion of patients is attached as Appendix S2.

All age groups in the screening population were represented, with the highest participation among the 40–49-year-olds ( $n = 79$ ) but all age groups were well represented;  $<30$  years:  $n = 41$ , 30–39-year-olds:  $n = 42$ , 50–59-year-olds:  $n = 58$ , and  $>60$  years:  $n = 29$ . Baseline characteristics are provided in Table 1.

TABLE 1 Baseline characteristics in study participants

Variable <sup>a</sup>	Total $n = 249$
Age	
<30 years old	41 (16.5)
30–39 years old	42 (17)
40–49 years old	79 (32)
50–59 years old	58 (23)
>60 years old	29 (11.5)
Screening history	
No delay (<6 months) <sup>b</sup>	138 (55.4)
Delayed (6–24 months)	61 (24.5)
Non-attenders (more than 24 months' delay)	42 (16.9)
Never been screened (among +25-year-olds)	8 (3.2)
Educational level	
Municipal primary and lower secondary school	11 (4.4)
Upper secondary school	15 (6)
Short-cycle higher education	61 (24.5)
Medium-cycle higher education	114 (45.8)
Long-cycle higher education	48 (19.3)
Occupational status	
Employed	202 (81)
Students	25 (10)
Unemployed	10 (4)
Retired	12 (5)

<sup>a</sup>Data are expressed as  $n$  (column %).

<sup>b</sup>Including women born before 1948 with a one-time offer for screening.

All but two municipalities in the North Denmark Region were represented in the study population, with the highest participation from Aalborg ( $n = 137$ ).

Previous screening history showed that 138 (55.4%) patients were on time or less than 6 months delayed compared with their recommended screening interval. Sixty-one patients (24.5%) were delayed more than 6 months but less than 2 years. Fifty patients (20.1%) were classified as non-attenders, with more than 2 years of screening delay. In the group of non-attenders, eight patients had never been screened before. Of the remaining 42 patients, the median time since last screening was 8.2 years (range 5.0–25.3 years) (Table 1).

Cervical cytology showed abnormal findings in 10 patients. This was primarily atypical squamous cells of undetermined significance (ASCUS) and low-grade squamous intraepithelial lesion (LSIL); one patient had high-grade squamous intraepithelial lesion (HSIL). Positive HPV tests were found in seven patients, where three had a positive HPV test and normal cytology. These women were referred to a follow-up as recommended in the cervical cancer screening program.

Information concerning educational and occupational status is provided in Table 1.

**TABLE 2** Results from the questionnaire regarding reasons for non-participation in the screening program among non-attenders

Reasons for previous non-participation <sup>a,b</sup>	n = 102 women <sup>c</sup>
Dislike the pelvic exam	45 (44.1)
Did not want own doctor to perform the examination	33 (32.4)
Too busy to find the time	33 (32.4)
Difficulties getting an appointment	40 (39.2)
Pregnancy	2 (2.0)
Afraid of the result	3 (2.9)
Did not find it relevant	1 (1.0)

<sup>a</sup>It was possible to choose more than one answer.

<sup>b</sup>Data are expressed as *n* answers (column %).

<sup>c</sup>Five women wrote their own personal reason and were not included in the table.

**TABLE 3** Information on media by which the patients heard of the walk-in clinic

Media where women found information on the walk-in clinic <sup>a,b</sup>	n = 249 women
Social media	119 (47.5)
Local radio	12 (4.8)
Newspaper ad	31 (12.4)
Hospital homepage	11 (4.4)
In the reminder	52 (20.9)
Heard it from others	41 (16.5)
From general practitioner	2 (0.8)
Elsewhere	2 (0.8)

<sup>a</sup>It was possible to choose more than one answer.

<sup>b</sup>Data are expressed as *n* answers (column %).

In all, 107 women who answered the question regarding reasons for previous non-participation: 45 patients noted the pelvic exam as a barrier, 33 patients did not want their own doctor to perform the examination, 33 were too busy to find the time, and 40 noted that they found it difficult getting an appointment with their doctor. Two noted previous pregnancy as the reason for non-participation. Three were afraid of the result of the test and one did not find it relevant (Table 2). Approximately 54% preferred a female doctor to perform the pelvic examination if they could choose.

Most patients (47.5%) found the information about the walk-in clinic on social media and 20.9% read about it in the reminders. More information on the reach of the different media is provided in Table 3.

## 4 | DISCUSSION

Since the implementation of cervical cancer screening in the 1960s in Denmark, cancer incidence has decreased, and it has now stagnated

at about 12.1 cases/100 000 women.<sup>1,3,15,16</sup> It is possible to prevent cervical cancer with the combination of cervical cancer screening and HPV vaccination, but only if participation rates of both are high.<sup>17,18</sup> The statistics show a decrease in participation in cervical cancer screening not only in Denmark but in most of Europe, over the last couple of years.<sup>19</sup> Furthermore, a Danish study have found a higher risk for non-participation in screening among non-vaccinated women, thereby putting these women at higher risk of developing cervical cancer.<sup>4</sup>

Previous studies have found multifactorial reasons for non-participation in cervical cancer screening; these reasons were mainly organizational and emotional barriers. Most women report difficulties in finding time in the daily bustle and problems with getting an appointment with their general practitioner. Some also report conflicts having either their doctor or practice nurse performing the examination and the sex of the examiner to be a barrier. Most women note the pelvic examination as a barrier. Some also report missing and wrongful information about HPV as a barrier, together with trouble understanding the reason for and relevance of screening.<sup>12,13,19,20</sup> Most of these factors are also valid for previous non-participation among patients in the present study. With the walk-in clinic, we tried to remove some of the primary practical barriers to cervical cancer screening and, to our knowledge, this is the first time this has been conducted. Over a relatively short study period we managed to attract 111 patients who had not followed the recommended screening program and therefore had a higher risk of developing cervical cancer. With the knowledge that about 50% of cervical cancers occur among women who have not followed the recommended screening program, this indicates that a walk-in clinic could be an alternative to reach previous non-attenders.

The walk-in clinic reached all age groups in the screening population, with the highest participation among 40–49-year-olds and the lowest among women >60 years. This is in accordance with national statistics showing highest participation among 45–49-year-olds and lowest among 25–29-year-olds.<sup>2</sup> A Danish study found that non-attenders are older, of lower socioeconomic status and have less contact with the healthcare system.<sup>21</sup> Others found that younger women more often forget to be screened and that older women have made an active decision not to be screened, and that lack of information about the timely correlation in the development of cervical cancer and the relationship with HPV is the reason why some older women do not find screening relevant. Providing older women with more information regarding HPV and the timely correlation is found to increase participation in screening.<sup>22,23</sup> Information regarding the walk-in clinic provided no additional information to that given in the screening program, but including this in future studies might help to attract more participants. In the present study we tried to target our campaign regarding the walk-in clinic for the under-screened population, as we did not want to compete with the GPs by attracting women who already followed the screening program. This was probably an unnecessary concern, as some GP's referred their patients to the walk-in clinic if they were too busy

themselves and a more obvious campaign might be beneficial in future studies.

Patients attending the walk-in clinic tended to be primarily actively working or students and with a relatively high level of education. Others have found a higher amount of non-attenders among non-native women and women with lower socioeconomic status and less contact with their general practitioner and other specialists including dental care.<sup>4,21,24–26</sup> A study conducted in Denmark found that non-native women with more than 5 years' residence in Denmark, who had consulted their doctor or dentist within the last year, had higher participation in cervical cancer screening compared with women with less than 5 years' residence in Denmark with none or minor contact with their general practitioner.<sup>25</sup> Lack of information regarding cervical cancer screening from their country of origin is proposed as one of the reasons for non-participation among non-native women.<sup>27</sup> No information about country of origin was gathered from the patients attending the walk-in clinic but our data suggest that we only managed to reach a relatively homogeneous population comprising well-educated and actively working women. Another Danish study found that the high rates for passive non-participation among non-natives could be due to language barriers, since the invitation for routine screening and reminders are written in Danish.<sup>28</sup> The information about the walk-in clinic was in Danish, which could have excluded some non-Danish-speaking women. The non-native population is predicted to rise in the future, thereby increasing the importance of alternatives to the screening program to adjust to these changes and making sure that the information is available in several other languages.<sup>24</sup>

Most women noted the pelvic examination as a barrier. Within the last few years, the possibility for self-sampling have been offered to women who have not responded to the first invitation and reminders in selected regions in Denmark in order to increase adherence to the screening program. Previous research showed a high participation in self-sampling, but some women noted that they wished to have the test done by a professional in order to receive further information and answers to their questions in connection with the test.<sup>19</sup>

This pilot study shows that a walk-in clinic has the potential of increasing participation in the cervical cancer screening program. A larger multi-center study including a comparative group and providing more information in more than one language is needed to draw conclusions on the cost-effectiveness.

## 5 | CONCLUSION

Among 249 patients who had a cervical smear test in the walk-in clinic, 111 (44.6%) had not followed the recommended screening intervals for cervical cancer. Non-adherence to the screening program is a major challenge, as approximately 50% of cervical cancers are found among non-attenders. This study indicates that walk-in clinics that offer a cervical smear without booking an appointment could increase participation among previous non-attenders.

## AUTHOR CONTRIBUTIONS

APF, JC, TL and HSK designed the study. APF performed data management. REB, APF and HSK performed data analysis and interpretation. REB and HSK wrote the manuscript. APF, JC and TL reviewed the final manuscript.

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## CONFLICT OF INTEREST

The authors have stated explicitly that there are no conflicts of interest in connection with this article.

## ORCID

Rikke Ekkelund Bonfeld  <https://orcid.org/0000-0003-1706-7538>

Anna Poulsgaard Frandsen  <https://orcid.org/0000-0002-1732-7283>

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#### SUPPORTING INFORMATION

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