

Cancer Screening Attendance among Czech Women

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Introduction

In recent years cancer has been one of the leading causes of death across (not only) European countries, which means that early diagnosis became an important issue. Many studies show that cancer screening helps to lower cancer-related death rates significantly although there is disagreement about the extent of the mortality reduction. For example Marmot et al. (2013) suggest that the reduction of breast cancer mortality is 20 % for women invited to screening. Another study by Landy et al. (2016) shows that if all women attended cervical cancer screening regularly, it would reduce cervical cancer mortality of women age 25.5–79 by half.

In Czechia, cancer is the second most common cause of death, causing annually around one quarter of all death cases. Breast cancer is the most frequently diagnosed cancer, with almost 1700 deaths in 2016, which is about 14% of all cancer deaths among women. Even though cervical cancer is less common, still around one thousand cases are diagnosed every year.

Following the EU recommendations (Perry et al., 2006; Arbyn et al., 2008), Czechia implemented population-based screening for breast cancer in 2002 and for cervical cancer in 2008. Until the end of 2009 breast cancer screening was provided to all women in the age 45 to 69 in two years interval and since 2010 it is provided to all women from the age 45 without any upper age limit. Cervical cancer screening is a part of regular gynaecological check-up and is provided to all women from 15 years of age. Even though

the screening has been running for several years now, there has been hardly any evaluation of screening attendance among the Czech women.

Data and methods

For analyzing the participation in cancer screening we used the data from the General Health Insurance Company (Všeobecná zdravotní pojišťovna) from 2009 to 2017, the biggest health insurance company in Czechia which provides healthcare for almost 60% of the Czech population. We have been provided by individual anonymized data that contained single record for each treatment with year of birth, sex, year when the care was provided, district of permanent residency of the patient (according to the LAU 1 regions), district where healthcare was provided and ID of patient. We calculated standardized attendance rates for the whole country, age-specific rates as well as standardized regional attendance rates for all 77 LAU 1 regions.

For identifying groups of women who do and do not attend screening, we used the data from the European Health Interview Survey 2014 (EHIS) with $n=2681$ for breast cancer screening and $n=3861$ for cervical cancer screening. We applied binary logistic regression to calculate chances to attend the screening.

Results

In the followed period of time the attendance in screening has grown for both cervical and breast cancer. However, the screening attendance is still quite low considering that the programmes have been running for 17 and 12 years, respectively. The standardized attendance rates are shown in Table 1.

Table 1: Standardized cancer screening attendance rates, Czech women

year	breast cancer screening	cervical cancer screening
2009	46.6	41.4
2010	41.3	43.4
2011	42.3	44.3
2012	45.4	44.4
2013	48.1	45.7
2014	51.2	45.4
2015	50.5	46.2
2016	51.7	46.3
2017	51.7	46.5

The highest attendance in breast cancer screening is in the youngest age group (45–49) with 61,8% of women attending in 2017. However after the age 70 the attendance drops rapidly. Younger women also tend to attend cervical cancer screening more, the highest attendance in 2017 was in the age 30 to 34 with 61,9% attendance rate. We have further discovered that in the bigger cities regions (Prague, Brno, etc) the attendance is lower than in the more countryside regions.

From the EHIS dataset we found out, that more educated women tend to attend screening more than less educated women: university-educated women are 3 times more likely to attend breast cancer screening (95% CI = 2.102–4.351) and 4.4 times more likely to attend cervical cancer screening (95% CI = 3.396–5.765) than women with primary education. Marital status and household income are also important.

Conclusion

We found out that there are differences in attendance among different groups of women. Population-based cancer screening in Czechia is being used by approximately half of all women. To increase the attendance levels, the knowledge of the characteristics of non-attenders is necessary as well as the knowledge of barriers which are causing the non-attendance to develop the set of recommendations on how to approach those women.

References

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