

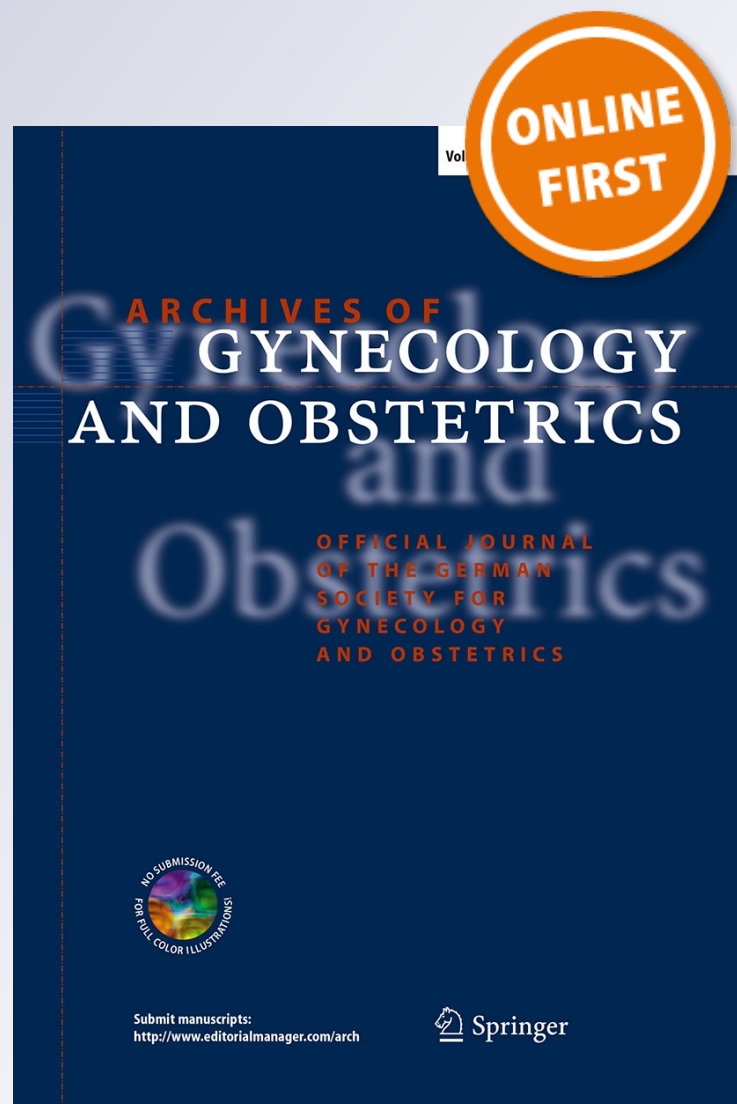
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# Cervical cancer screening in Germany: group-specific participation rates in the state of Niedersachsen (Lower Saxony). A study with health insurance data

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## Abstract

**Purpose** The participation rates in cervical screenings are varying over different countries. This is only partly due to the availability of organized screening programs, as the rates are also varying between countries where such programs were implemented. For Germany the level of knowledge is low, and information are outdated. In order to improve the level of knowledge, we examined whether the participation rates in cervical screenings in a large German insurance population were changing over time, and whether these changes were different with respect to age and qualification of the participating women.

**Methods** The analyses were based on the complete anonymised dataset of a large statutory health insurance in Lower Saxony, Germany, with case numbers between 940,827 (2006) and 1,044,797 (2011) women aged 20 years and older.

**Results** Between 2006 and 2011 the overall annual participation rates were increasing from 44.8 to 47.6 %. The highest rates occurred in women with the highest qualification level, thus leading to increasing social differences over time. There was a peak in the age group of 25–29 years from annually 60.3 (2006) to 60.2 % (2011), and bi-annually from 77 to 77.1 % with constantly decreasing rates up to the age of 60. No substantial differences occurred between a 2- and a 3-year observation period.

**Conclusions** Over time only small increases of participation rates in cervical screenings occurred. These findings may be interpreted in favor of population-based screenings within an invitation program.

**Keywords** Cervical screening · Participation rates · Long-term data · Registry data

## Introduction

In the last decades, the incidence of cervical cancer has decreased considerably, and so has the number of women dying from the disease. These improvements are mainly due to regular cervical screening [1]. According to the last version of the European Code against Cancer screenings should be offered to all women above the age of 25 [2]. The code also recommends screenings within the framework of organized programs. A number of countries, e.g., Denmark, Sweden, Finland and Italy have implemented them, and the available literature is consistent in concluding that cervical screening has positive effects by leading to significant reductions of the incidence of cervical cancer [1, 3–6]. It remains to be determined to what extent the screening programs are reaching the target groups. In a Finnish study covering the years 2000–2009, it was reported that 72.4 % responded to invitations to participate, [4] for Denmark [5] a participation rate of 76 % after invitation was reported, although there is variation in the figures between studies from the same country. In an Italian study, it was reported that 36 % of the women who were invited in the 1995–2008 never responded [6].

The populations of these studies were not stratified by social groups, thus it is not clear whether all segments of the population are responding to the programs with the same

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