Fifteen-year analysis of cervical cancer trends in Saudi Arabia

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Abstract

Background: Incidence of invasive cervical cancer is low in Saudi Arabia, and it varies by nationality, region and stage. Understanding the trends is essential for designing interventions that align with global elimination goals.

Aim: To estimate cervical cancer incidence trends by nationality, region and stage in Saudi Arabia.

Methods: In this retrospective study, we analysed data obtained from the Saudi Cancer Registry on all women (N = 3038) diagnosed with cervical cancer in Saudi Arabia from 2005 to 2019. We calculated the age-standardised incidence rates by nationality, region and stage at diagnosis using the world standard population.

Results: Incidence of cervical cancer varied by nationality, region and stage. Non-Saudi women had higher rates than Saudi women, while Makkah Region consistently had the highest rates, followed by Riyadh and Eastern regions. The proportion of localised-stage diagnoses increased from 24.2% in 2005 to over 40.0% in 2019, while cases with unknown stage decreased from 19.6% to 6.3%.

Conclusion: In alignment with the global priority of eliminating cervical cancer, Saudi Arabia should intensify efforts to reduce its disease burden by ensuring equitable access to services across the cervical cancer continuum and raising awareness of the early signs and symptoms to increase early stage detection. There is a need to continuously monitor completeness and validity of cancer registry data to ensure that they are of high quality, relevant and suitable for policymaking.

Keywords: cervical cancer, human papillomavirus, screening, diagnosis, Saudi Arabia

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Background

Invasive cervical cancer incidence varies significantly worldwide, with age-standardised annual incidence rates (ASIRs) ranging from 4.1 per 100 000 women in Western Asia to over 40 in Eastern Africa *(1)*. Persistent infection with high-risk human papillomavirus (HPV) is the predominant cause, making cervical cancer highly preventable through HPV vaccination, screening and early diagnosis *(2)*. Effective preventive methods for preinvasive cervical pathology are readily available, affordable and non-invasive, leading to a broad consensus that most cervical cancers and related deaths are preventable *(3)*.

Recognizing this, the World Health Organization (WHO) called for global coordinated action to eliminate cervical cancer in 2018 *(4)*. In November 2020, WHO launched a global strategy to accelerate elimination, aiming to reduce incidence to below 4 per 100 000 women globally. This target was based on expert consultation, definitions of rare diseases and feasibility assessments across countries *(5)*. The strategy highlights the importance of population-based cancer registries in monitoring cervical cancer incidence by stage at diagnosis to track progress toward elimination *(5)*.

Saudi Arabia comprises 13 administrative regions, with an estimated population of 32 million in 2022, 58.4% of which are Saudi nationals. Two-thirds of the population (67.6%) live in Riyadh (26.7%), Makkah (25.0%) and the Eastern region (16.0%), where health services are proportionately concentrated *(6,7)*. Over the past few decades, the country has undergone economic and demographic transitions, characterised by decreasing fertility rates and a large migrant workforce. Religious and cultural norms prohibit extramarital sex, and smoking prevalence among women remains relatively low.

In line with the WHO global strategy to eliminate cervical cancer, the Saudi Ministry of Health incorporated HPV vaccination into its routine vaccination programme in 2021. While screening guidelines for early detection of precancerous cervical lesions have been in place since 2016 *(8)*, a systematic screening programme is yet to be

implemented. As of 2023, 39.0% of girls turning 15 in Saudi Arabia had received 2 doses of the HPV vaccine *(9)*, while cervical cancer screening coverage among women aged 30–49 remained low at 19.0% in 2019 *(10)*.

Cervical cancer incidence in West Asia and the WHO Eastern Mediterranean Region is among the lowest globally *(1)*. From 1998 to 2012, incidence rates in Saudi Arabia remained very low (2 per 100 000 women per year), on a global scale and compared to most neighbouring Gulf Cooperation Council (GCC) countries *(11)*. This study provides updated incidence trends up to 2019, disaggregated by tumour stage, administrative region and nationality, using population data adjusted to the 2022 census.

Methods

Data sources

In this observational, registry-based study, we used data from the Saudi Cancer Registry on all women diagnosed with cervical cancer (ICD-10: C53.0, C53.1, C53.8 and C53.9) between January 2005 and December 2019 (N=3038). The dataset included variables such as date of birth, date of diagnosis, nationality, administrative region of residence and diagnosis, tumour stage (SEER summary stage 2000) *(12)*, grade, morphology and behaviour.

Population data

We obtained population counts for 2005–2019 by nationality (Saudi, non-Saudi), 5 year age groups (0–4 to 80+) and administrative region. These were derived from the 2004, 2010 and 2022 censuses published by the General Authority for Statistics *(6,13–16)*.

Data quality and exclusions

Data quality indicators were adapted from the CONCORD programme for the global cancer surveillance survival *(17)*. A total of 185 records were excluded because their tumours were *in situ*. Seven women were excluded for having an unknown date of birth, 17 for being younger than 20 or older than 99 years at diagnosis, 3 for age-morphology mismatch and 296 for site-morphology mismatch (e.g. papillary serous cystadenocarcinoma, papillary transitional cell carcinoma, large-cell carcinoma). Fourteen women were excluded because their region of residence was not known and 16 non-Saudi women were excluded because they were not residents of Saudi Arabia. After these exclusions, 2496 women (82.2%) remained in the final analysis.

Incidence rate calculation

To ensure sufficient sample size for each region/stage group and to smoothen the year-to-year fluctuations, we calculated incidence rates by 5 year age groups for the 3 periods: 2005–2009, 2010–2014 and 2015–2019. The rates were disaggregated by nationality (Saudi/non-Saudi), region of residence and stage at diagnosis. ASIRs were then derived for each period, region of residence and stage using the direct standardisation method, multiplying the standard weights from the Segi-Doll world standard population by the age-specific rates and summing the weighted age-specific incidence rates. The world standard population, developed for the first volume of cancer incidence in 5 continents, allows for continuous comparisons across countries, regions and time *(18)*. The analysis was carried out in STATA version 18.

Ethics approval

This study was approved by King Abdulaziz University (reference number 64–24).

Results

The mean age at diagnosis with invasive cervical cancer was 53.4 years for Saudi women and 49.8 years for non-Saudi women (Table 1, Figure 1). Age-specific incidence rates were higher among non-Saudi women across all age groups (Figure 2). The majority of Saudi (80.5%) and non-Saudi (89.4%) women lived in Makkah, Riyadh, and the Eastern Region. The distribution of tumour grade was similar between the 2 groups and 96.0% of diagnoses were pathologically confirmed (Table 1).

The proportion of women with localised-stage diagnoses increased in the 3 main regions from 2005–2009 to 2010–2014 and increased further in Riyadh and Makkah from 2010–2014 to 2015–2019, while no increase was observed in the Eastern Region (Figure 3). In the 10 other regions, the proportion of women diagnosed at a localised stage remained low at approximately 25% from 2005–2009 to 2010–2014. However, this proportion increased in 2015–2019, replacing regional stage as the predominant stage at diagnosis. Among women with a documented stage at diagnosis, those living in Makkah had the highest proportion of localised stage and the lowest proportion of distant stage over the study period. Women in the 10 other regions were more likely to have an unknown stage (18.0% for all periods combined) than the 3 main regions (10.2–14.6%).

Examining year to year trends from 2005 to 2019, the proportion of localised-stage diagnoses increased from 24.2% to over 40.0%, while cases with unknown stage decreased from 19.6% to 6.3%. After 2012, localised stage surpassed regional stage as the most frequent stage at diagnosis (Figure 4).

The ASIR for invasive cervical cancer across all nationalities and regions were 1.52, 3.34 and 2.62 per 100 000 women in 2005–2009, 2010–2014 and 2015–2019, respectively. Incidence varied across regions, with the 3 main regions reporting higher rates than the 10 peripheral ones. Makkah Region consistently had the highest incidence rates throughout 2005–2019. ASIRs were higher in 2010–2014 and 2015–2019 than 2005–2009 across all regions (Table 2). Incidence rates were higher among non-Saudi women for all stages of invasive cervical cancer. Incidence of unknown stage was particularly high among non-Saudi women between 2005 and 2014 but became comparable to the incidence

Table 1 Characteristics of women diagnosed with invasive cervical cancer in Saudi Arabia, 2005–2019 (N = 2496)

		Saudi								Non-Saudi							
		2005–2009		2010–2014		2015–2019		All periods		2005–2009		2010–2014		2015–2019		All periods	
		mean	SD	mean	SD	mean	SD	mean	SD	mean	SD	mean	SD	mean	SD	mean	SD
Age		52.2	13.9	52.8	12.9	54.8	13.7	53.4	13.5	47.2	12.5	49.6	12.0	49.4	12.3	48.8	12.3
		n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%
Region of diagnosis	**Riyadh**	123	28.0	136	25.0	188	30.2	447	27.8	76	28.8	70	20.8	88	30.6	234	26.3
	Makkah	132	30.0	160	29.4	193	31.0	485	30.2	147	55.7	181	53.7	143	49.7	471	53.0
	Eastern	76	17.3	84	15.4	122	19.6	282	17.6	16	6.1	45	13.4	29	10.1	90	10.1
	Other	109	24.8	165	30.3	119	19.1	393	24.5	25	9.5	41	12.2	28	9.7	94	10.6
Stage	**Localised**	125	28.4	151	27.7	258	41.5	534	33.2	85	32.2	155	46.0	156	54.2	396	44.5
	Regional	198	45.0	220	40.4	191	30.7	609	37.9	70	26.5	73	21.7	74	25.7	217	24.4
	Distant	76	17.3	101	18.5	128	20.6	305	19.0	28	10.6	33	9.8	33	11.5	94	10.6
	Unknown	41	9.3	73	13.4	45	7.2	159	9.9	81	30.7	76	22.6	25	8.7	182	20.5
Grade	**I**	30	6.8	50	9.2	52	8.4	132	8.2	18	6.8	20	5.9	31	10.8	69	7.8
	II	159	36.1	172	31.6	185	29.7	516	32.1	76	28.8	126	37.4	104	36.1	306	34.4
	III	112	25.5	159	29.2	196	31.5	467	29.1	78	29.6	88	26.1	77	26.7	243	27.3
	IV	19	4.3	11	2.0	15	2.4	45	2.8	14	5.3	21	6.2	13	4.5	48	5.4
	Unknown	120	27.3	153	28.1	174	28.0	447	27.8	78	29.6	82	24.3	63	21.9	223	25.1
Basis of diagnosis	**Clinical/ imaging**	10	2.3	9	1.7	34	5.5	53	3.3	10	3.8	7	2.1	5	1.7	22	2.5
	Pathology	426	96.82	530	97.25	580	93.3	1536	95.6	252	95.5	328	97.3	281	97.6	861	96.9
	Death certificate only	4	0.9	6	1.1	8	1.3	18	1.1	2	0.8	2	0.6	2	0.7	6	0.7
Morphology	**Squamous**	304	69.1	362	66.4	397	63.8	1063	66.2	187	70.83	228	67.7	202	70.1	617	69.4
	Glandular	90	20.5	96	17.6	139	22.4	325	20.2	39	14.8	61	18.1	52	18.1	152	17.1
	Other	46	10.5	87	16.0	86	13.8	219	13.6	38	14.4	48	14.2	34	11.8	120	13.5

observed among Saudi women between 2015 and 2019 (Table 3, Figure 5).

Discussion

We examined the characteristics of women diagnosed with invasive cervical cancer in Saudi Arabia over 15 years, highlighting time trends, regional incidence patterns, and differences between Saudi and non-Saudi women. These findings are essential for informing public health strategies.

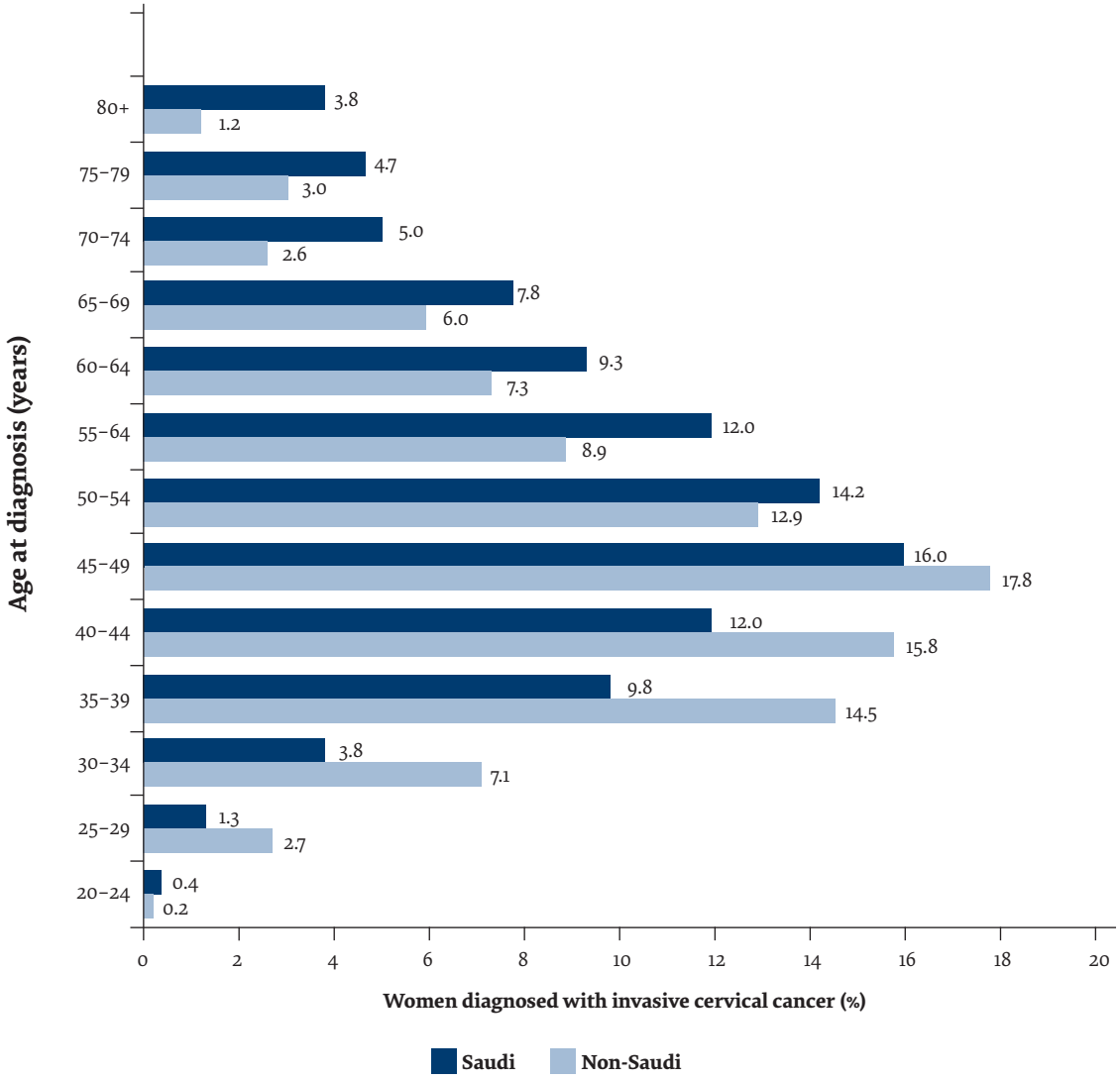
Age pattern

Non-Saudi women are typically diagnosed at a younger age, partially reflecting their population distribution, as they are predominantly of working age. Age-specific incidence patterns in Saudi Arabia align with those observed in low-resource settings, where rates continue to increase until age 69 (*19*). However, in high-resource countries, incidence rates typically peak around age 40, likely due to the detection and removal of pre-cancerous (dysplastic) or pre-invasive (in situ) lesions through screening (*19*). The higher prevalence of hysterectomy in some high-income countries have contributed to lower incidence rates among older women (*19*). The notably high incidence rates reported among non-Saudi women aged 75–79 years is likely due to under-enumeration of this population age group, or misclassification of women aged 75–79 years as over 80 in the census (age heaping) (Table 3).

Stage at diagnosis

When appropriate treatment is available, stage at diagnosis is the most important predictor of survival (*20*). Over the study period, the distribution of diagnosis stages became more favourable, with 37% of women diagnosed at a localised stage in 2015–2019. However, this is lower than the proportion reported in high-income countries with established screening programmes, such as Northern Ireland (45% localised, 2017–2021) and the United States of America (42% localised, 2014–2020) (*21,22*). A similar shift toward localised stage was observed in the United Arab Emirates, where the proportion increased from 15.6% in 2003–2007 to 38.3% in 2008–2012. In other GCC countries (Bahrain, Kuwait, Oman, Qatar), the lack of stage data for a large proportion of women limits trend

Figure 1 Age at diagnosis of invasive cervical cancer cases by nationality in Saudi Arabia (2005–2019, N = 2496)



analysis *(11)*. A similar challenge is encountered in Jordan, where between 2000 and 2013, 43% of women diagnosed with cervical cancer were at the localised stage, while the stage remained unknown for 28% *(23)*. In 2017, 49% of women were diagnosed at the localised stage. However, a slight decrease in this proportion was observed in 2018 and 2019. These findings should be interpreted with caution, because advancements in diagnostic procedures may have improve the detection of local invasion or distant metastasis.

In Saudi Arabia, the shift from predominantly regional to localised stage at diagnosis occurred later in the 10 peripheral regions. In 2015–2019, the proportion of women with unknown stage decreased, suggesting improvements in diagnosis timeliness and thoroughness. This may reflect increased awareness among women in these regions or enhanced clinical resources. In recent years, efforts have been made to improve access to health care across various regions of Saudi Arabia.

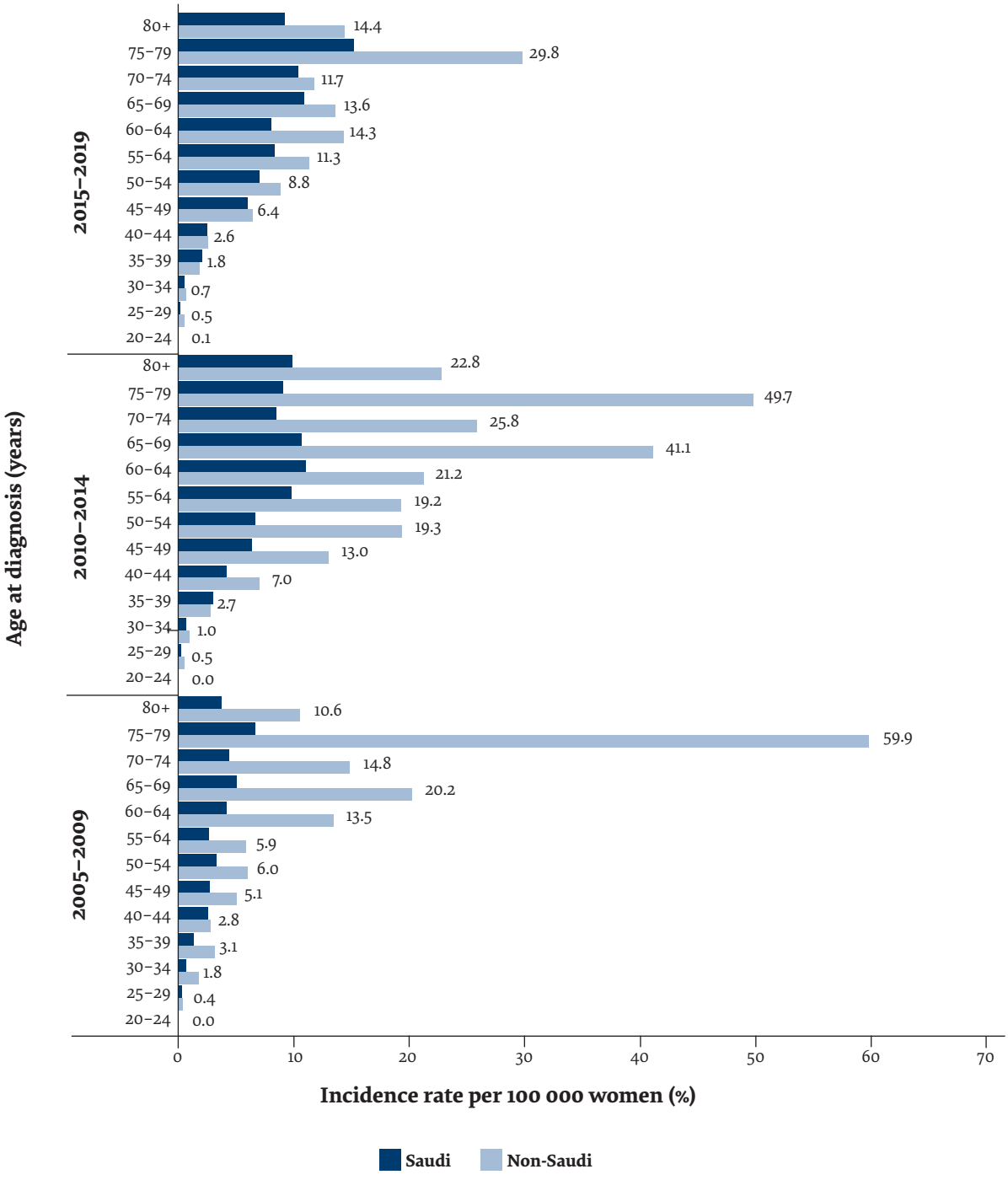
Incidence rates

Age-standardised incidence rates increased between 2005 and 2014. Among Saudi nationals, the annual incidence rates were 1.23, 2.7 and 2.45 per 100 000 women in 2005–2009, 2010–2014 and 2015–2019, respectively. These rates are comparable to those reported in cancer incidence in 5 continents for 2008–2012 (1.9 per 100 000 per year, Riyadh only) *(24)* but exceed CI5-XII estimates for the later period (1.5 per 100,000 per year) *(25)*. However, these estimates are similar to the 2018 Globocan estimates for Saudi Arabia (2.5 per 100 000 women per year) *(26)*.

The rates are also higher than our previous calculations, which were based on pre-2022 census population estimates *(27)*. Earlier projections overestimated the 2022 population of Saudi Arabia by approximately 2 million, leading to an underestimation of incidence rates.

Despite the increase observed in age-standardised incidence rates between 2005 and 2019, incidence is very low compared to global estimates. Low incidence rates in Saudi Arabia and the Middle East are likely attributable

Figure 2 Age-specific incidence rates of invasive cervical cancer by calendar period among Saudi and non-Saudi women (N = 2496)



to the low prevalence of premarital and extramarital sex, rooted in religious and cultural norms. However, little is known about the actual prevalence of extramarital sex or the number of lifetime sexual partners among Saudi men and women.

Among 5377 men and women presenting to primary care with symptoms suggestive of sexually transmitted infections (STIs) in 2009, 8.6% reported having sex outside marriage. However, because the surveys were conducted in primary health centres and were not anonymous, under-reporting is probable *(28)*. Among 400 women aged 22–80 years attending routine cervical examinations in Riyadh (2013–2015), only 12% reported multiple lifetime sexual partners, and only 4% reported more than 3 *(29)*. A survey of 453 male adolescents in Riyadh high schools revealed that 38% had experienced sexual contact *(30)*.

The prevalence of high-risk HPV strains remains uncertain due to the lack of population-based prevalence studies and the absence of HPV testing in routine screening programmes. The best available proxy for HPV prevalence may be data from women with normal cervical cytology. A study of 1276 women visiting gynaecology

Figure 3 Stage distribution of invasive cervical cancer among women in Saudi Arabia (2005–2016, N = 2496)

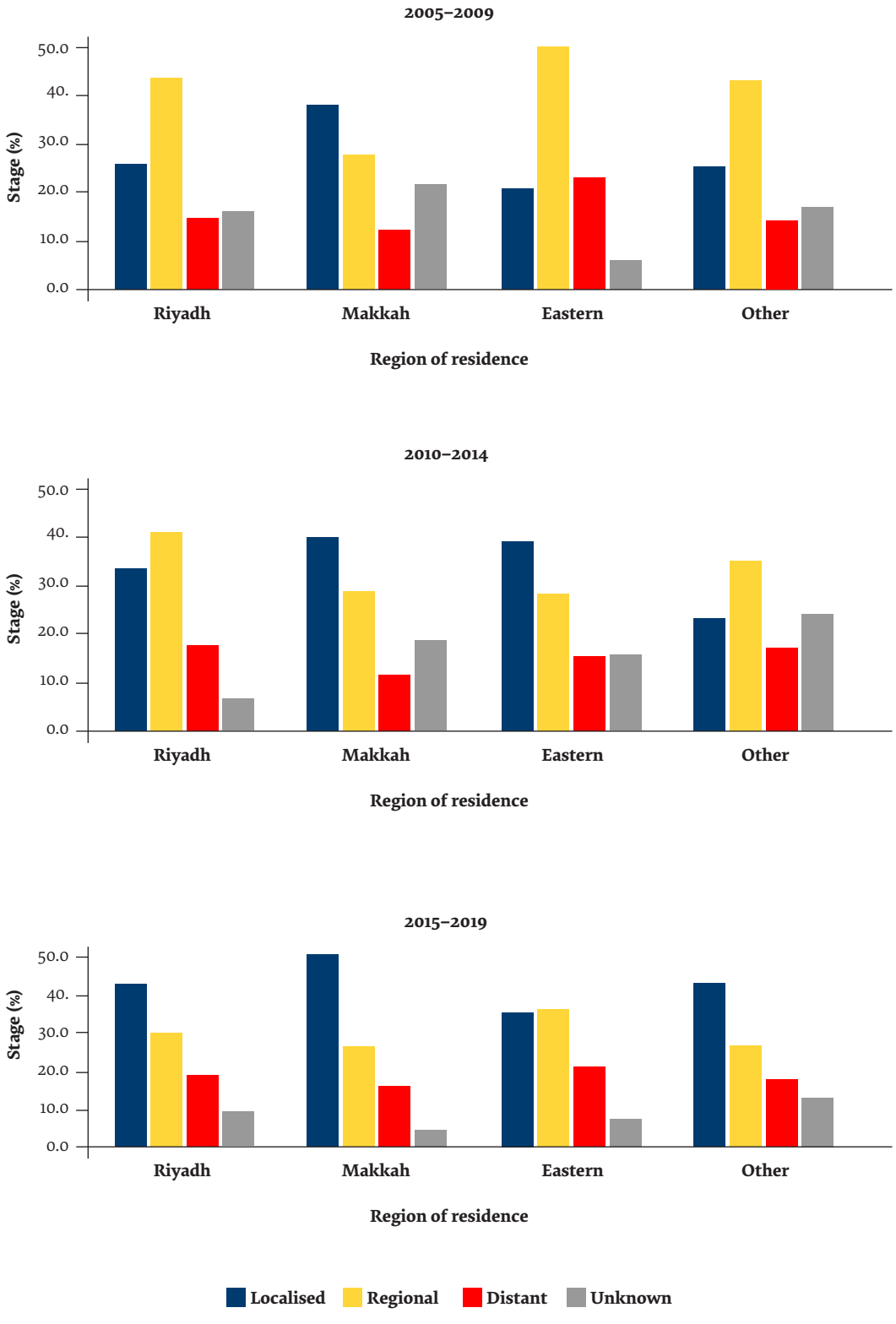


Table 2 Age-standardised incidence rates of invasive cervical cancer by region for all nationalities in Saudi Arabia (N = 2496)

	2005–2009			2010–2014			2015–2019		
	N	Age-standardized incidence rate	95% confidence intervals	N	Age-standardized incidence rate	95% confidence intervals	N	Age-standardized incidence rate	95% confidence intervals
All	704	1.52	(1.39–1.64)	882	3.34	(3.10–3.58)	910	2.62	(2.43–2.81)
Riyadh	199	2.14	(1.79–2.49)	206	3.53	(2.98–4.09)	276	3.51	(3.04–3.99)
Makkah	279	2.25	(1.97–2.54)	341	4.40	(3.89–4.91)	336	3.48	(3.08–3.88)
Eastern	92	1.58	(1.22–1.95)	129	4.07	(3.27–4.87)	151	3.05	(2.48–3.62)
Other	134	0.72	(0.59–0.85)	206	2.21	(1.88–2.53)	147	1.20	(0.99–1.40)
Asir	22	0.59	(0.33–0.85)	45	2.65	(1.83–3.47)	32	1.30	(0.82–1.77)
Baha	10	0.98	(0.35–1.61)	4	0.86	(0.00–1.73)	10	2.00	(0.75–3.26)
Hail	6	0.35	(0.00–0.75)	19	3.23	(1.67–4.78)	7	1.26	(0.29–2.23)
Jazan	9	0.33	(0.11–0.55)	20	1.28	(0.69–1.88)	10	0.49	(0.17–0.82)
Jouf	11	1.67	(0.64–2.70)	14	2.98	(1.29–4.67)	6	1.08	(0.21–1.96)
Madinah	35	1.02	(0.67–1.38)	43	2.00	(1.36–2.64)	30	1.08	(0.67–1.50)
Najran	11	1.29	(0.48–2.10)	10	2.22	(0.72–3.72)	16	2.44	(1.16–3.72)
Northern	2	0.52	(0.00–1.27)	7	2.66	(0.51–4.81)	6	1.82	(0.33–3.32)
Qassim	19	0.98	(0.50–1.45)	29	2.40	(1.41–3.40)	20	1.23	(0.64–1.82)
Tabuk	9	0.63	(0.19–1.07)	15	2.73	(1.28–4.18)	10	1.24	(0.39–2.08)

clinics in Saudi Arabia reported a 17.2% prevalence of high-risk HPV types *(31)*.

Despite the lack of empirical data, high-risk sexual behaviours are widely believed to be increasing among Saudi men and women due to globalisation, increased travel and expanded use of the internet and social media *(32)*. However, later marriage, delayed childbearing and decreasing parity may reduce the risk of invasive cervical cancer *(33)*, alongside increasing uptake of pap testing. Since the mid-20th Century, Arab countries, including Saudi Arabia, have experienced an increase in age at first marriage and increasing celibacy among women. While this trend reduces early childbirth and

Figure 4 Stage distribution (%) by year of diagnosis for women diagnosed with invasive cervical cancer in Saudi Arabia (2005–2019, N = 2496)

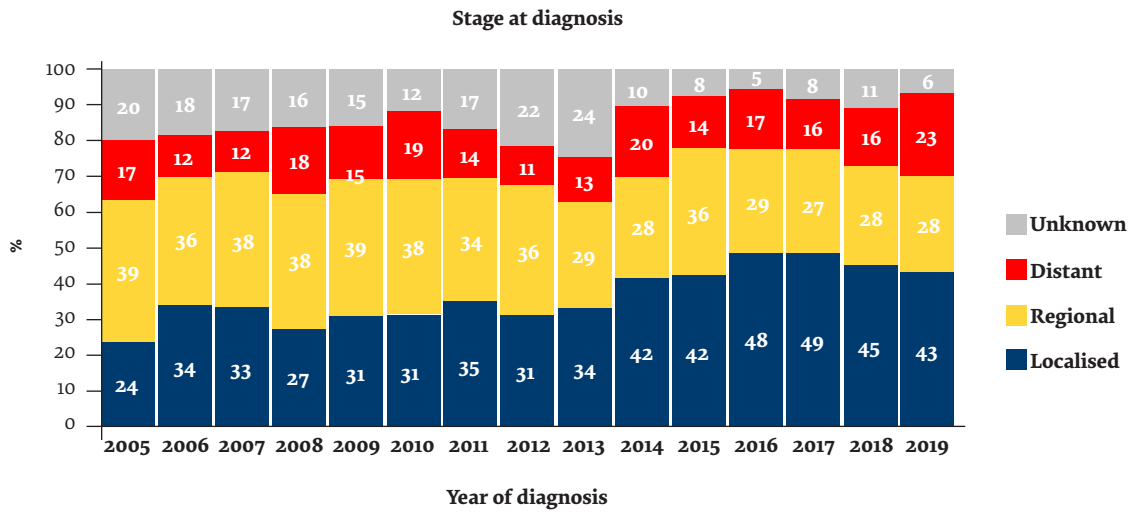


Table 3 Female average mid-year general population and number diagnosed with invasive cervical cancer

	Saudi						Non-Saudi					
	2005–2009		2010–2014		2015–2019		2005–2009		2010–2014		2015–2019	
Age (years)	Population (million)	n	Population (million)	n	Population (million)	n	Population (million)	n	Population (million)	n	Population (million)	n
20–24	4.23	1	4.56	2	4.83	3	0.67	0	0.89	1	1.07	1
25– 29	4.20	10	4.49	3	4.80	8	1.40	5	1.82	7	2.18	12
30–34	3.80	25	4.07	19	4.34	17	1.43	26	1.82	19	2.16	18
35–39	3.30	44	3.54	61	3.78	53	1.85	57	2.34	37	2.78	35
40–44	2.76	69	2.96	73	3.16	50	1.66	47	2.14	59	2.54	34
45–49	2.28	62	2.45	90	2.61	104	0.87	44	1.14	61	1.36	53
50–54	1.81	59	1.95	70	2.08	98	0.32	19	0.43	54	0.51	42
55–59	1.38	36	1.48	70	1.57	86	0.20	12	0.27	32	0.33	35
60–64	1.02	42	1.09	53	1.16	55	0.14	19	0.19	20	0.24	26
65–69	0.70	35	0.74	41	0.80	49	0.08	17	0.12	23	0.15	13
70–74	0.49	21	0.53	25	0.57	35	0.05	8	0.08	9	0.09	6
75–79	0.32	21	0.34	17	0.39	37	0.01	8	0.02	10	0.03	9
80+	0.40	15	0.43	21	0.43	25	0.02	2	0.03	5	0.03	4
Total	26.68	440	28.61	545	30.51	620	8.72	264	11.29	337	13.48	288

Source: Saudi census: https://portal.saudicensus.sa/portal

multiparity, it may also lengthen the interval between menarche and marriage, potentially increasing the risk of premarital sexual activity without access to sexual health services *(34,35)*. Additionally, male circumcision, which is widely practised in Saudi Arabia and other Muslim-majority countries, provides protection against HPV transmission *(36)*.

Incidence by region

For all nationalities combined, age-standardised incidence rates were higher in the 3 most populous regions than the 10 other regions, with the highest rates in Makkah and Riyadh. These regions also have the largest non-Saudi female populations in the country (46% and 51%, respectively) *(6)*. The proportion of non-Saudis among women with cervical cancer was higher in Makkah (35.4%) and Riyadh (49.3%) than 24.2% in the Eastern region and 19.3% in the remaining regions.

Incidence by nationality

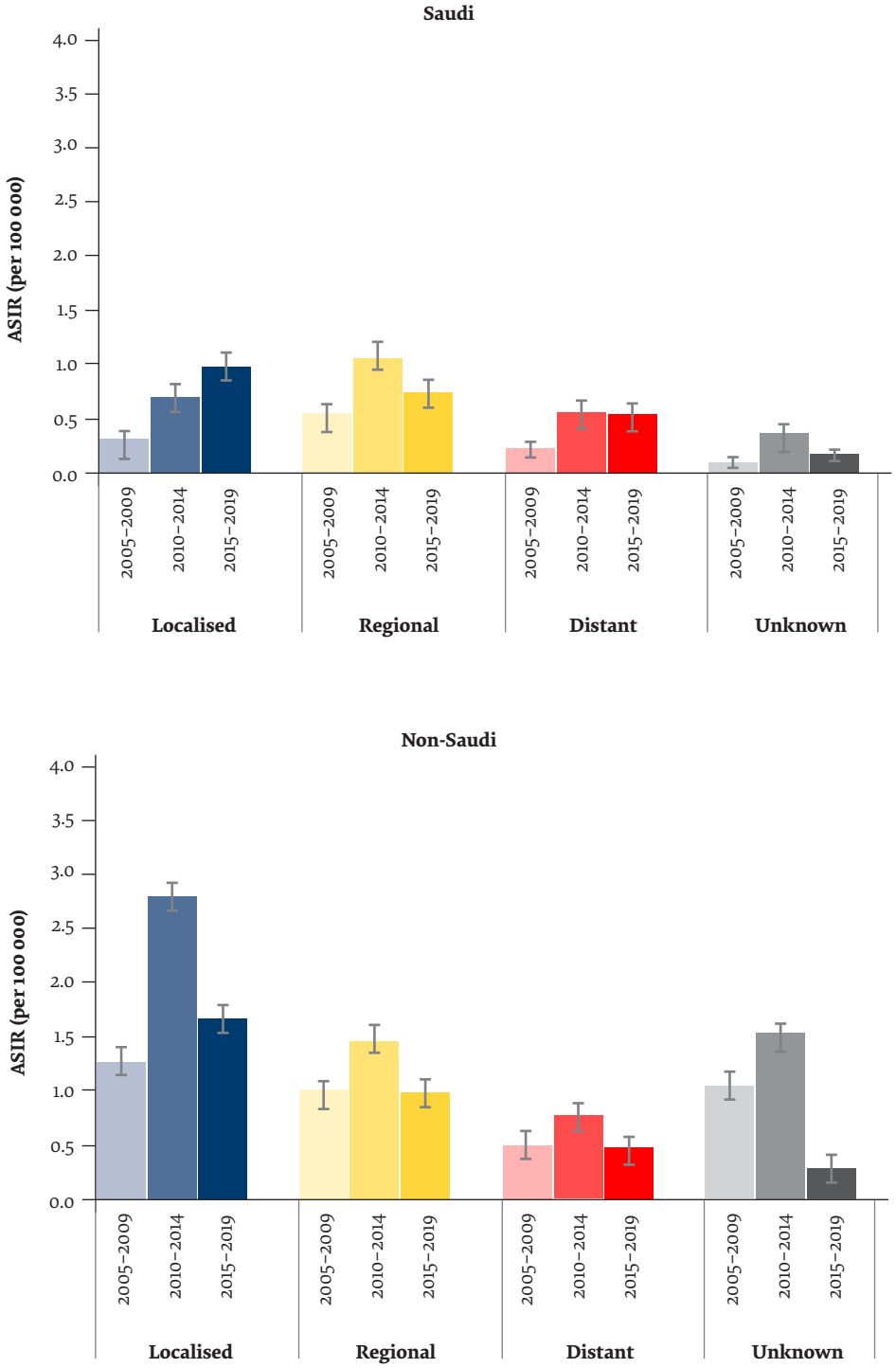
Non-Saudi women had higher incidence rates than Saudi women across all age groups and at every stage of invasive cervical cancer. This may be a reflection of the risk profile of their countries of origin, as half of the 889 non-Saudi women in this study were from Philippines, Indonesia, Yemen and Somalia. The estimated ASIRs for cervical cancer in 2022 were 15.5, 23.3 and 26.6 per 100 000 women in the Philippines, Indonesia and Somalia, respectively (37). While Yemen has a low estimated ASIR (2.1 per 100 000), Yemeni nationals constitute one of the largest expatriate groups in Saudi Arabia, contributing to a relatively high number of cases.

Lower socioeconomic status is associated with an increased risk of cervical cancer, and many non-Saudis work in low-paying, unskilled jobs (e.g. domestic helpers). Employment-related migration has been linked to a higher STI risk due to factors such as being young, single, or migrating alone; economic vulnerability that may lead some women to engage in sex work; and the loss of social norms from their home countries *(38)*. Ethnicity-based clustering of sexual networks may also influence risk *(39)*. In the United Kingdom, young women in deprived areas are less likely to receive the HPV vaccine or attend cervical screening, hence compounding disparities *(40)*. Similar barriers may limit non-Saudi women's access to preventive services in Saudi Arabia.

Although cervical cancer incidence in Saudi Arabia remains low, our findings suggest a possible increase, in contrast to trends in developed countries with established preventive services. Due to data limitations, the future burden of cervical cancer in Saudi Arabia remains uncertain.

HPV vaccines have been licensed in Saudi Arabia since 2013 but were only added to the national vaccination schedule in November 2021. This means a large cohort of unvaccinated women is now entering the age group at risk for cervical cancer. Expanding high-quality, organised cervical screening with national coverage is crucial to reducing incidence and detecting

Figure 5 Age standardised incidence rates by stage at diagnosis for Saudi and non-Saudi women (N = 2496, 95% confidence intervals)



pre-symptomatic lesions earlier. Preventive and early diagnostic programmes should include mechanisms to ensure equitable access and resource allocation.

A systematic screening programme should invite all eligible women for screening based on the Ministry of Health guidelines (3 years after marriage until age 65) and ensure follow-up for those with positive results. Home-based HPV testing could offer a culturally sensitive, accessible and feasible screening option, given the low HPV prevalence in Saudi Arabia and its widely dispersed population *(41)*. However, this would require an effective system for swab transport and collection, as well as structured recall procedures. Any screening initiative should be preceded by a pilot phase and include robust monitoring and evaluation systems. Clear and open communication is essential to inform participation.

The most important determinant of cervical cancer survival is early diagnosis. Raising awareness of early signs and symptoms could increase the proportion of tumours detected at an earlier stage, enabling

curative surgical management, such as conisation or hysterectomy. In Saudi Arabia, surgery is more widely accessible than chemoradiation, making early detection particularly important in settings with limited access to specialised treatment centres.

For young women diagnosed with stage I cervical cancer, early diagnosis can allow for fertility-sparing surgery. Preserving fertility is a crucial outcome to consider, especially in societies where having children is highly valued.

Limitations of the study

Although the use of a population-based cancer registry with national coverage and statutory cancer registration theoretically ensures access to all cancer patients' records, there is no system to routinely verify the completeness of case ascertainment. A 2013 assessment (unpublished report) identified no major issues regarding low completeness. However, completeness should ideally be evaluated through independent case ascertainment from a sample of sources over a defined diagnosis period and compared with registry records.

A small number of tumours – averaging 24 annually – are registered as "uterine, not otherwise specified". However, only about 2% exhibited squamous cell morphology, indicating that most originated from the uterine corpus rather than the cervix. These cases were therefore excluded from this analysis.

Conclusion

The current WHO goal to eliminate cervical cancer as a public health concern is to reduce incidence to below 4 per 100 000 women per year in all countries through targeted HPV vaccination, screening and treatment of precancerous lesions. In the *Regional cervical cancer elimination strategy for the Eastern Mediterranean*, WHO recommends that countries already below this threshold should aim for a relative reduction and redefine goals based on their local context *(42)*. This will also ensure that incidence rates do not increase.

A national cancer control plan or cervical cancer strategy should account for higher-risk population subgroups, such as migrant women, as well as socio-demographic transitions that may increase the future burden of cervical cancer. It should consider the economic and quality-of-life benefits of preventive measures, the impact of treating cervical intraepithelial neoplasia and cervical cancer, and the role of vaccination in preventing other HPV-related cancers, such as oropharyngeal and anal cancers.

Given the global priority of cervical cancer elimination, Saudi Arabia must intensify efforts to reduce the disease burden and ensure equitable access to services across the cervical cancer continuum, including HPV vaccination, screening, early diagnosis, treatment and palliative care.

Further research is needed to better understand sexual behaviour patterns, HPV vaccine uptake, screening coverage and HPV prevalence in Saudi Arabia and such studies should be representative of the population, not limited to a single centre and should include non-Saudis, with results stratified to highlight at-risk populations.

Long-term monitoring of cervical cancer trends is essential, particularly as unvaccinated cohorts reach the at-risk age. Changes in stage at diagnosis should also be closely tracked. Additionally, research on barriers to early diagnosis, including awareness levels across population groups and regions, could inform targeted interventions to improve early detection. Regular evaluation of cancer registry completeness and validity is necessary to ensure high-quality data for policy-relevant research.

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Analyse sur 15 ans des tendances du cancer du col de l'utérus en Arabie saoudite

Résumé

Contexte : L'incidence du cancer invasif du col de l'utérus est faible en Arabie saoudite et varie selon la nationalité, la région et le stade de la maladie. La compréhension de ces tendances est essentielle afin de mettre en place des interventions qui s'alignent sur les objectifs d'élimination mondiaux.

Objectif : Estimer les tendances de l'incidence du cancer du col de l'utérus selon la nationalité, la région et le stade de la maladie en Arabie saoudite.

Méthodes : Dans la présente étude rétrospective, nous avons analysé les données obtenues auprès du Registre saoudien du cancer sur l'ensemble des femmes (N = 3038) pour lesquelles un cancer du col de l'utérus avait été diagnostiqué en Arabie saoudite entre 2005 et 2019. Nous avons calculé les taux d'incidence standardisés selon l'âge en fonction de la nationalité, de la région et du stade de la maladie au moment du diagnostic, sur la base de la population mondiale standard.

Résultats : L'incidence du cancer du col de l'utérus variait selon la nationalité, la région et le stade. Les femmes non saoudiennes présentaient des taux plus élevés que les femmes saoudiennes, tandis que la région de la Mecque enregistrait systématiquement les taux les plus élevés, suivie par les régions de Riyad et de l'Est. La proportion de diagnostics à un stade localisé est passée de 24,2 % en 2005 à plus de 40,0 % en 2019, tandis que celle des cas de stade inconnu a diminué, de 19,6 % à 6,3 %.

Conclusion : Conformément à la priorité mondiale d'élimination du cancer du col de l'utérus, l'Arabie saoudite devrait contribuer à la réduction de sa charge de morbidité en garantissant un accès équitable à l'ensemble des services liés à la lutte contre cette maladie et en renforçant la sensibilisation aux premiers signes et symptômes afin de favoriser la détection à un stade précoce. Il est nécessaire de surveiller en permanence l'exhaustivité et la validité des données du registre du cancer afin de s'assurer qu'elles sont de haute qualité, pertinentes et adaptées pour l'élaboration des politiques.

تحليل اتجاهات سرطان عنق الرحم في المملكة العربية السعودية على امتداد خمسة عشر عامًا

إيمان الخلاوي، كلاوديا أليماني، علي سعيد الزهراني، ميشيل كولمان

الخلاصة

الخلفية: إن معدل الإصابة بسرطان عنق الرحم الغَزْويّ منخفضٌ في المملكة العربية السعودية، ويختلف حسب الجنسية والمنطقة والمرحلة. وفَهْم هذه الاتجاهات أمرٌ ضروريٌّ لتصميم تدخلات تتماشى مَع أهداف القضاء على هذا المرض عالميًا.

الأهداف: هدفت هذه الدراسة الى تقدير اتجاهات الإصابة بسرطان عنق الرحم حسب الجنسية والمنطقة والمرحلة في المملكة العربية السعودية.

طرق البحث: جَمعت هذه الدراسة الاستعادية للأتراب وحلَّلت بيانات جميع النساء (العدد = 3038) اللائي شخِّصت حالاتهن بسرطان عنق الرحم في المملكة العربية السعودية من 2005 إلى 2019. وقد صنَّفنا البيانات، وحسبنا معدلات الإصابة الموحدة حسب السن وفقًا للجنسية والمنطقة والمرحلة عند التشخيص، وقارنَّاها مع المعيار العالمي للسكان.

النتائج: ثمة تفاوت في نِسَب الإصابة بسرطان عنق الرحم حسب الجنسية والمنطقة والمرحلة. وسُجلت معدلات أعلى لدى النساء غير السعوديات مقارنة بالسعوديات، في حين كانت منطقة مكة المكرمة باستمرار صاحبة أعلى المعدلات، تليها منطقتا الرياض والشرقية. وارتفعت نسبةُ تشخيصات المرحلة المَوْضعية من 24.2 ٪ في 2005 إلى أكثر من 40.0 ٪ في 2019، في حين انخفضت الحالات ذات المرحلة غير المعروفة من 19.6 ٪ إلى 6.3٪.

الاستنتاجات: تماشيًا مع الأولوية العالمية للقضاء على سرطان عنق الرحم، ينبغي على المملكة العربية السعودية المساهمة في تقليل عبء هذا المرض بضمان الوصول العادل إلى الخدمات عبر سلسلة رعاية سرطان عنق الرحم، وزيادة الوعي بالعلامات والأعراض المبكرة لزيادة اكتشافه في المراحل المبكرة. وثمة حاجة إلى رصد مستمر للاتجاهات السائدة والتشخيص واكتمال بيانات سجل السرطان وصحتها لضمان أنها ذات جودة عالية وملائمة ومناسبة للاعتماد عليها في وضع السياسات.

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