

# Patterns of breast, prostate, oesophageal and cervical cancer incidence in South Africa: A study from the Eastern Cape population-based cancer registry (1998-2021).

P2-D13

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The incidence rates of prostate, cervical, and breast cancers are rising, while the incidence of oesophageal cancer is declining. However, despite this downward trend, oesophageal cancer remains more common among females than males.

## BACKGROUND

- In South Africa, prostate, breast, and cervical cancers are listed as the top three priority cancers under the National Cancer Strategic Framework 2017-2022.
- In the Eastern Cape population-based cancer registry (EC-PBCR), prostate, breast, cervical and oesophageal cancer are the most common cancers.
- EC-PBCR, has a higher oesophageal cancer incidence than elsewhere.
- Usually, oesophageal cancer is more common in males than females, but in EC-PBCR is the opposite.
- Therefore, this study aims to investigate the incidence and trends of cancers of the female breast, cervix, prostate, and oesophagus in the Eastern Cape province in South Africa during 1998-2021 period.

## METHODS

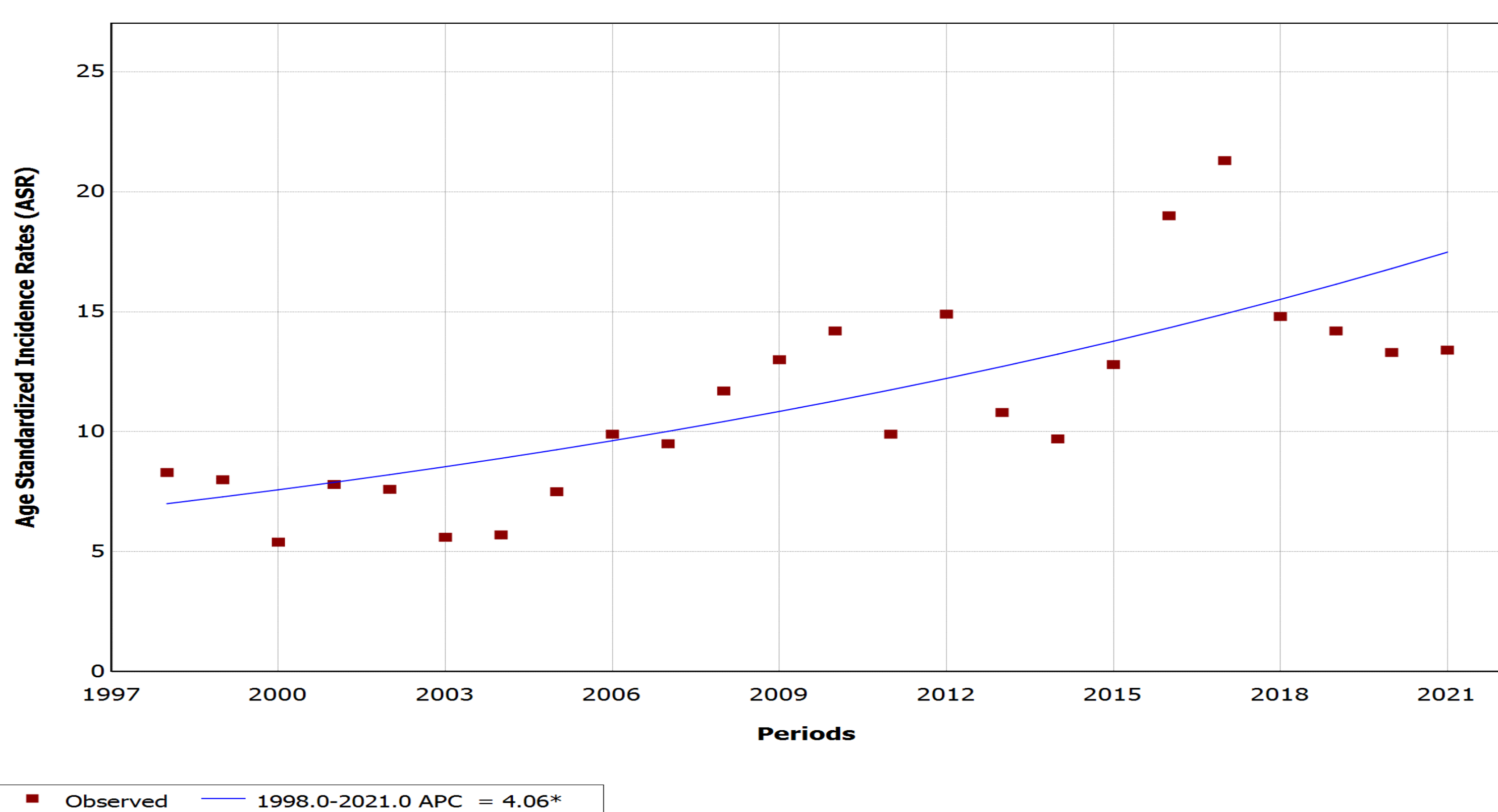
- Cancer data was obtained from the EC-PBCR from 1998-2021.
- The South Africa census of 2001, 2011 and 2022 was used to extrapolate population estimates.
- Direct age-standardization: Observed age-specific rates was applied directly to the Segi-Doll world standard population.
- Age-specific, age-standardized incidence rates, standard error and annual percentage change (APC) was calculated using Stata version and Joinpoint regression program version 4.5.0.1.

## RESULTS

Table 1: Proportion of cancer type by basis of diagnosis and gender

CANCERS	Clinical		Morphological verification (MV)		Male		Female		Total	
	n	%	n	%	n	%	n	%	n	%
Breast	159	11.98	1,168	88.02	0	0.00	1,327	18.25	1,327	12.96
Cervix	684	18.33	3048	81.67	0	0.00	3,732	51.33	3,732	36.45
Oesophageal	1,635	39.80	2,473	60.20	1,896	63.86	2,212	30.42	4,108	40.12
Prostate	82	7.64	991	92.36	1,073	36.14	0.00	0.00	1,073	10.48
Total	2,56	25.00	7680	75.00	2,969	100.00	7,271	100.00	10,240	100.00

Figure 1: Breast cancer incidence rates and Annual Percentage Change from 1998-2021: All: 0 Joinpoints



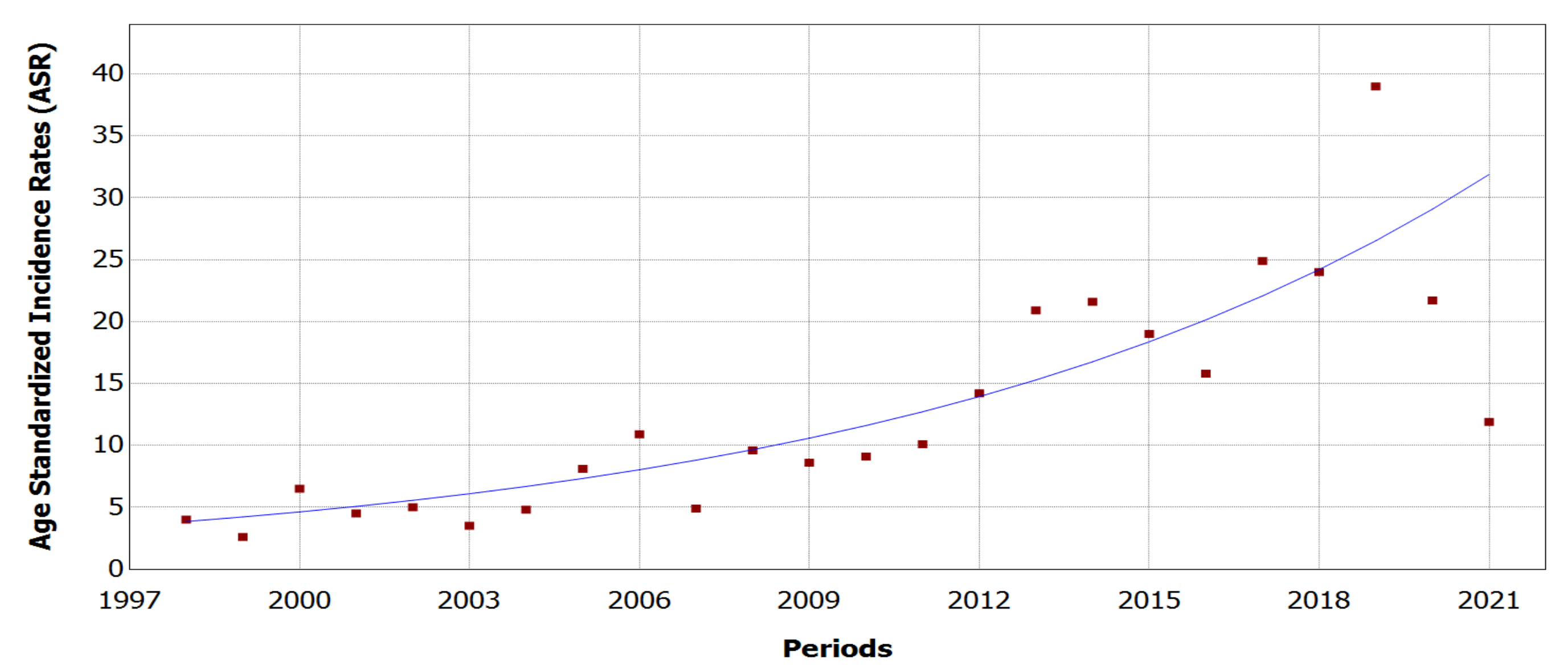
\* Indicates that the Annual Percent Change (APC) is significantly different from zero at the alpha = 0.05 level. Final Selected Model: 1 Joinpoint.

- Total reported cancers from 1998-2021 were 10 240 and the mean age was 60.8 (SD=14.4), oesophageal cancer contributed the most cases 40.11% (4 108), followed by cervical 36.45% (3,732), breast 12.96% (1,327) and prostate with 10.48% (1,073).

## RESULTS CONTINUED

- The annual percentage change of cancers of the prostate (9.63%), breast (4.06%) and cervix (3.78%) increased significantly over the period 1998 to 2021 (P < 0.001).
- Oesophageal cancer decreased significantly in males (-2.59%) and females (-3.29%). However, oesophageal incidence rates remain higher in females than males.

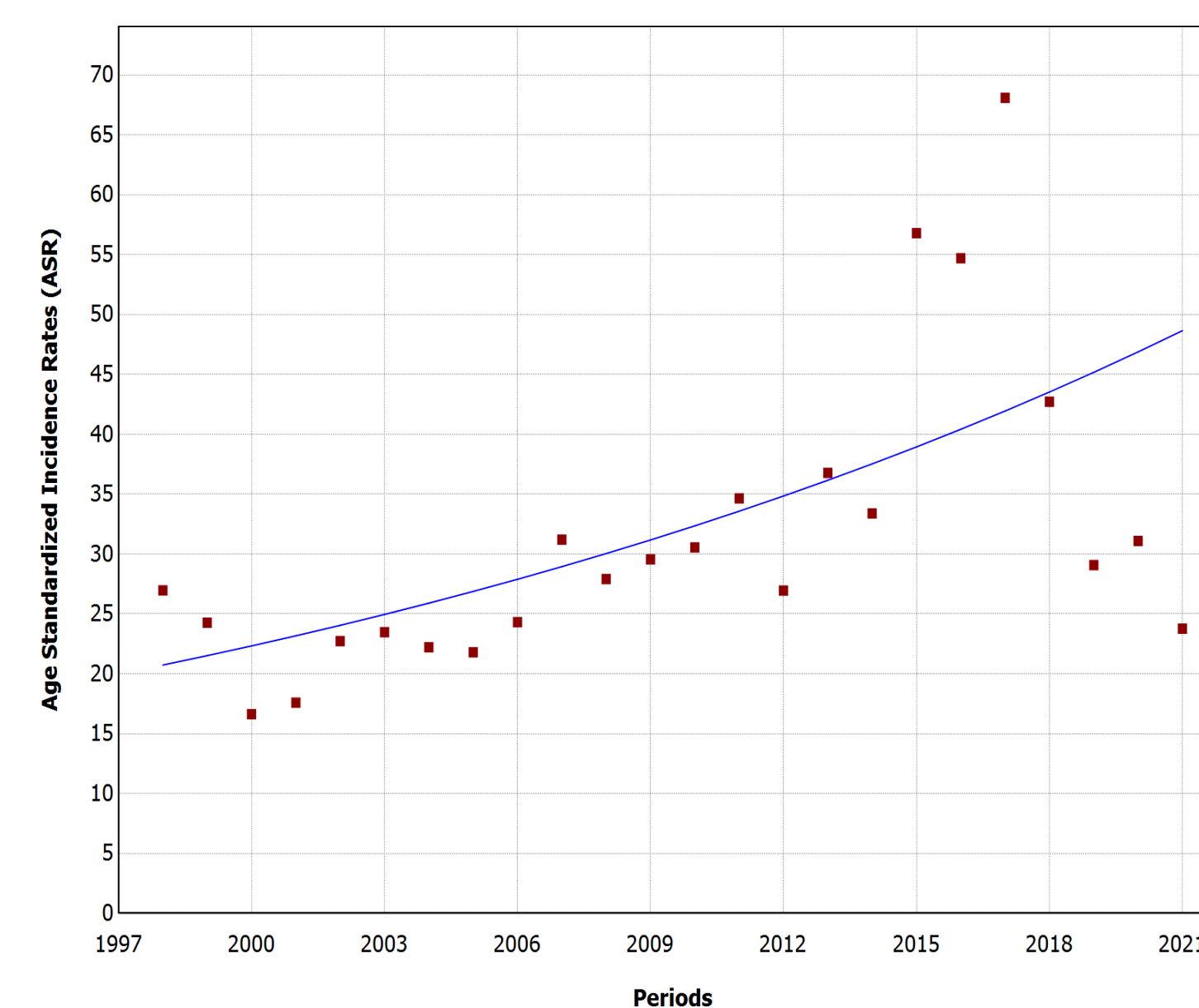
Figure 2: Prostate cancer incidence rates and Annual Percentage Change from 1998-2021: All: 0 Joinpoints



Observed 1998.0-2021.0 APC = 9.63\*

\* Indicates that the Annual Percent Change (APC) is significantly different from zero at the alpha = 0.05 level. Final Selected Model: 1 Joinpoint.

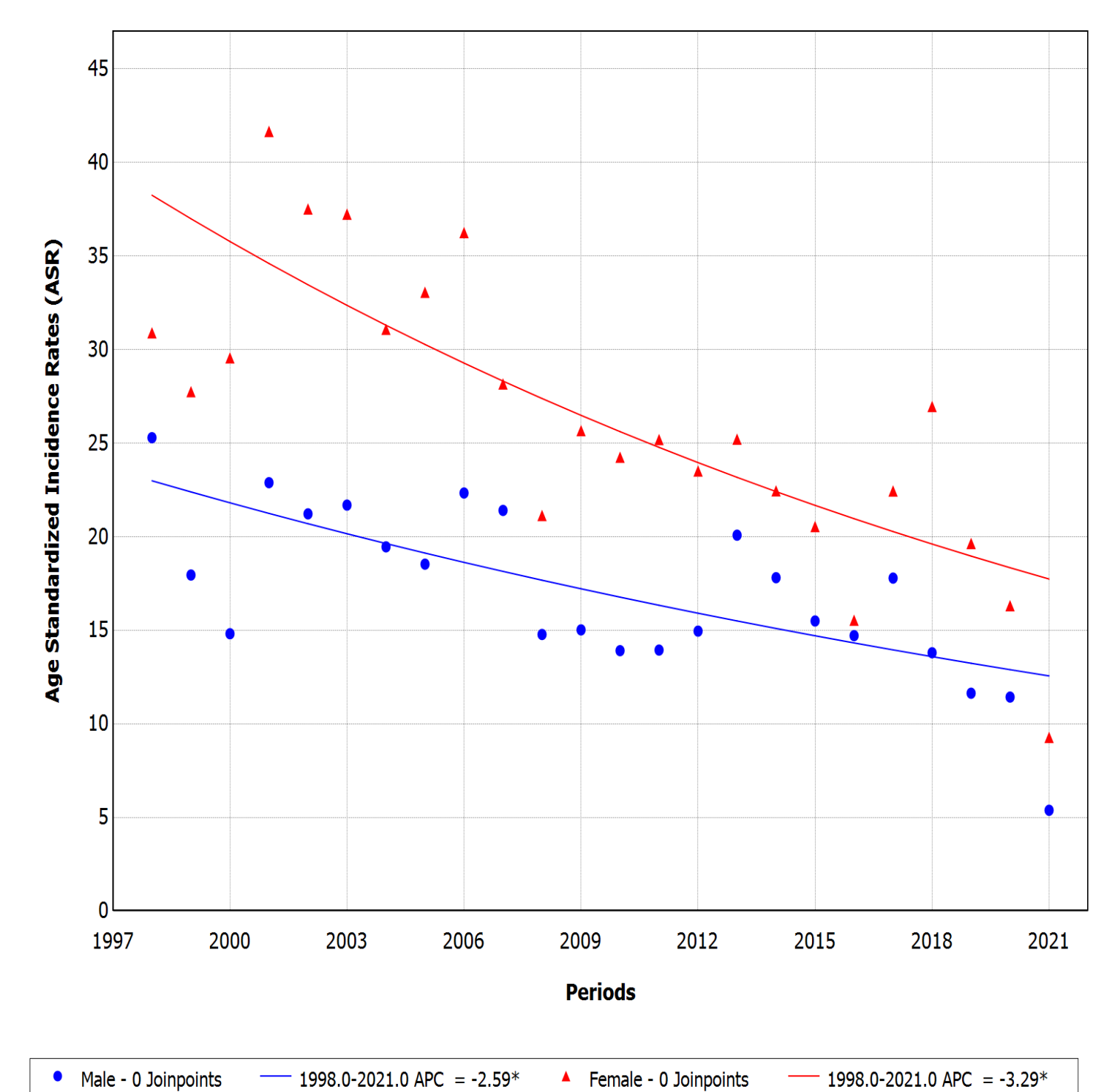
Figure 3: Cervical cancer incidence rates and Annual Percentage Change from 1998-2021: All: 0 Joinpoints



Observed 1998.0-2021.0 APC = 3.78\*

\* Indicates that the Annual Percent Change (APC) is significantly different from zero at the alpha = 0.05 level. Final Selected Model: 2 Joinpoints.

Figure 4: Oesophageal cancer incidence rates and Annual Percentage Change by gender from 1998-2021



## CONCLUSIONS

- The trends and patterns of prostate, breast, cervical and oesophageal cancer were observed over the period of 1998-2021.
- There was a significant increase of the prostate, breast and cervical cancers trends in the EC-PBCR.
- These four common cancers persist as significant public health challenges in the Eastern Cape Province, emphasizing the need for the development of improved prevention and management strategies.

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