



Parish level social factors predict population-based cervical cancer incidence in Kampala, Uganda, 2008–15: an ecological study



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Abstract

Background The burden of cancer in Africa is growing. Although cancer outcomes are understood as the product of influences at multiple socioecological levels, population-based studies of geographical factors and cancer outcomes in Africa are scarce. The objective of this study was to identify parish-level social factors associated with cervical cancer incidence in the Kampala Cancer Registry catchment area, using a novel linkage between population-based cancer registry data and small-area census data from Uganda.

Methods Kampala Cancer Registry cervical cancer records (2008–15) were augmented to add the parish of residence at diagnosis. Parish-level population and housing profile data (2014) were obtained from the Uganda Bureau of Statistics and linked to Kampala Cancer Registry records. Stepwise forward Poisson regression modelling was used to estimate incidence ratios (IR) assessing associations between social factors and incidence. Housing tenure, infrastructure, gender equality, economic status, and employment were examined, controlling for population density. The significance level was set at $\alpha=0.05$.

Findings Factors related to higher incidence included a higher girl-to-boy ratio of 6–12-year-olds not attending school (IR 1.33 [95% CI 1.15–1.54]; $p<0.001$), a higher percentage of 10–17-year-olds ever married (IR 1.22 [95% CI 1.06–1.40]; $p=0.006$) and a higher percentage of households receiving remittances (IR 1.03 [95% CI 1.00–1.06]; $p=0.026$). Factors associated with lower incidence included a higher percentage of household owner occupancy (IR 0.95 [95% CI 0.92–0.98]; $p=0.002$) and a higher percentage of households with piped water (IR 0.97 [95% CI 0.95–0.99]; $p=0.009$).

Interpretation Parish-level social factors predict cervical cancer incidence in Uganda. Communities most at risk are characterised by inequity in educational access for girls, higher prevalence of child marriage, low home ownership, inadequate infrastructure, and financial dependence. These communities would benefit from HPV vaccination and screening campaigns to prevent and control cervical cancer. Investments should be made to enhance population-based cancer surveillance and census data collection in Africa to offer new strategies and targets for cancer prevention and control.

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Contributors

KMMB conceived of the study, conducted the analysis, and drafted the Abstract. SK, RL, and HW contributed to study design and data interpretation. RA and YZ contributed to data preparation, analysis, and interpretation. CJ managed the project and contributed to data interpretation. SN, PMA, and BN contributed to data collection and preparation. HW oversaw data collection. All authors have seen and approved the final version of the Abstract for publication. All authors had full access to all the data in this Abstract and had final responsibility for the decision to submit for publication.

Declaration of interests

We declare no competing interests.

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