

RECOMMENDATIONS

Despite the relatively low smoking prevalence in Kenya, it has been suggested that appropriate strategies should be adopted urgently to avoid increased use of tobacco products, to facilitate decrease in this preventable risk factor, for non-communicable diseases, which are the main causes of death and illnesses, of which Kenya is not an exception.

The following recommendations are considered useful within the Kenyan context:

- Restrict the advertisement of cigarette smoking through billboards, newspapers, radio and television. At the same time increase public awareness campaign on the harmful effects of smoking cigarettes, as well as other tobacco use, through the mass media. Appeal to sporting clubs to promote tobacco free sports by refusing sponsorship from tobacco entrepreneurs and avoid the use of cigarette advertisement in the promotion of their respective sporting activities.
- Enact legislation with severe penalties to restrict or ban smoking in public places, such as, restaurants, cinemas, play parks, supermarkets, public transport, e.g. taxis, buses, steamers, ferries, etc and work towards the banning of cigarette smoking at work places.
- Formulate public policies and enact legislation that regulates tax increases for tobacco products, as well as point of sale and distribution.
- Enact and enforce legislation that prevents minors from purchasing cigarettes and other tobacco products by prosecuting those who sell tobacco products to minors.
- Involve the Ministries of Health and Education, as well as NGO's, in the campaign to promote the cessation of cigarette smoking and use of other tobacco products, especially among youths.
- Design and implement cessation programs for schools and all youth-oriented or affiliated organisations. Cessation programs in schools must be integrated in the school curriculum and should be done on systematic basis.

APPENDIX A: Weighting, Variance Estimation, and Statistical Testing

School, classroom, and student data were weighted to produce total population estimates. The weighting factors reflect the probability of selection, non-response, and post-stratification (gender X grade).

Variances were estimated using general linear variance estimators. This method of computing variances takes into account the complex nature of the design and the classroom cluster effect. It also accounts for sampling with probability proportional to measure of size.

SUDAAN was used to compute standard errors for the estimates. Because the estimates shown in this report are based on a sample, they are subject to sampling error. A measure of the sampling error is given by the standard error. Figure 1 shows the estimated standard error associated with an observed percent. Standard errors for any estimate can be determined by either: 1) locating the intersection of the “x” and “y” axes on the predicted value line; 2) inserting the percentage of interest into the estimated regression equation shown on the figure.

Statistical Testing for Differences

A proportion and its estimated standard error may be used to construct confidence intervals (CI) about the estimate. The CI is expressed as a range (upper and lower bound) around the estimate. The CI contains the average value of the proportion, which would result if all possible samples were produced. The 95% CI suggests that if 100 samples were drawn and CIs. were calculated for each, then the average value of the proportion would be contained in 95 of the 100 CIs.

The test of statistical significance is done by comparing the 95% CI for two percentages. If the CIs. do not overlap then the percentages are significantly different. For example,

1) In Table 1 we can test the difference in the percent ever smoked between males (21.0%) and females (8.5%). The Difference is –

$$\begin{aligned} \text{Diff.} &= 21.0 - 8.5 \\ &= 12.5 \end{aligned}$$

2) Using the equation for Kenya ($y = -0.0015x^2 + 0.1464x + 0.9444$). The Standard Error (SE) can be calculated for 21.0% and 8.5%.

$$\begin{aligned} \text{SE } 21.0 &= -0.0015(21.0^2) + 0.1464(21.0) + 0.9444 \\ &= 3.4 \end{aligned}$$

$$\begin{aligned} \text{SE } 8.5 &= -0.0015(8.5^2) + 0.1464(8.5) + 0.9444 \\ &= 2.1 \end{aligned}$$

3) The 95% CI for each percent is calculated by multiplying the SE * 1.96.

$$\begin{aligned} \text{95\% CI for } 21.0 &= 3.4 * 1.96 \\ &= 6.7 \end{aligned}$$

So the upper bound is (21.0+ 6.7 =27.7) and the lower bound is (21.0 – 6.7 =14.3)

$$\begin{aligned} \text{95\% CI for } 8.5 &= 2.1 * 1.96 \\ &= 4.1 \end{aligned}$$

So the upper bound is (8.5+ 4.1 = 12.6) and the lower bound is (8.5 -4.1 = 4.4).

4) Statistical difference is determined by comparing the upper and lower bound range for the two percentages.

a) If the ranges do not overlap, then the two percentages are considered statistically different at the 95% CI level. b) If the ranges do overlap, then there is no statistical difference between the two percentages.

In this example, the percentages 21.0 (27.7 – 14.3) and 8.5 (12.6 – 4.4) do not overlap, thus males are significantly more likely than females to have ever smoked cigarettes.