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## **Collaboration :**

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### **Objective**

Estimation of Cause-specific Tobacco Attributable Mortality in India

### **Design**

Population-based cohort study with mortality as end point in Mumbai

### **Recruitment**

Voters' list used as selection frame.

House-to-house approach.

Interviewer administered questionnaire.

All Individuals (men, women)  $\geq 35$  yr enrolled in Phase I.

Only men age  $\geq 45$  yr enrolled in Phase II

Data inputted directly into a programmed, handheld computer (PDA).

### **Sample size**

99598 individuals (60% women) enrolled in Phase I (1991-95).

About 50 000 in Phase II (1995-97)

### **Follow-up**

Active follow-up through house-to-house approach after 5 to 6 years (from mid-1997 onwards)

Face to face interview, if available.

Date of death or migration noted if reported dead or migrated.

### **Baseline results**

*Gupta PC. Tobacco control 1996; 5(2): 114-120*

### **Partial follow-up results from 52568 individuals.**

*Gupta PC, Mehta HC. Bulletin of the World Health Organization. 2000; 78(7); 877-83.*

Baseline and complete Phase I follow-up Results presented

## House-to-house follow-up after 5.5 years in Mumbai Cohort Study

Attempted	99,570	100%
• Not identified	205	0.2%
• Address not located	1855	1.9%
• Invalid information	266	0.3%
• Denominator	97,244	97.7%
❖ Migration	11,091	11.4%
❖ Contacted	86,153	88.6%
➤ Died	7531	8.7%
➤ Interviewed	74,517	86.5%
➤ Not available	4105	4.8%

## Matching of deaths in Mumbai Cohort Study

Deaths	7531	100.0%
• Out side study area	815	10.8%
• Within study area	6716	89.2%
❖ Matched deaths	5674	84.5%
➤ Coded deaths	5470	96.4%

**Person-years of follow-up and number of deaths,  
and annual mortality rates, among Cohort Study  
women and men, Mumbai**

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	<b>Men</b>	<b>Women</b>	<b>Total</b>
Persons	39,141	58,103	97,244
Person years	210,129	323,316	533,445
Deaths	4119	3412	7531
Mortality rate			
(per 1000)	19.6	10.6	14.1
Crude	17.9	11.4	14.1
Age-adjusted			

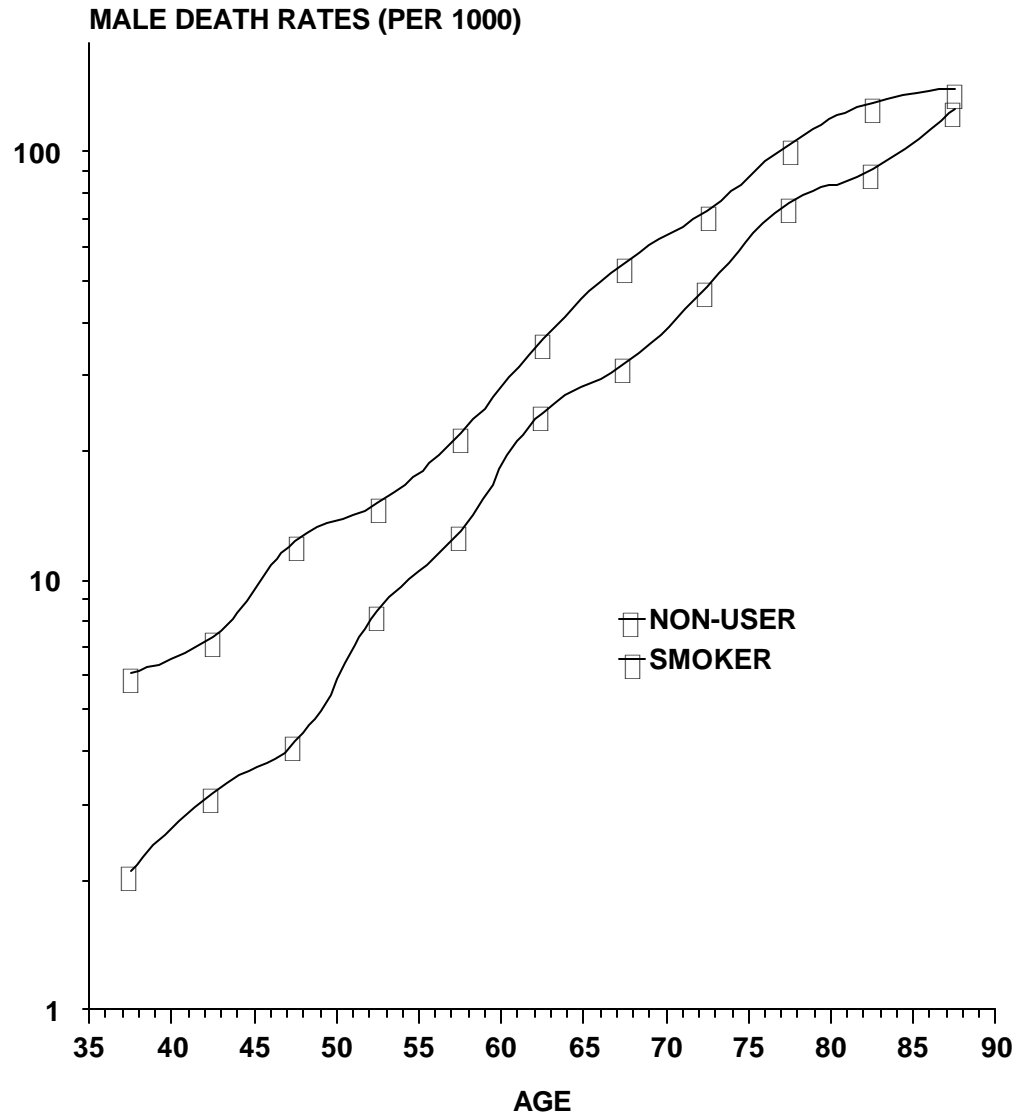
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**Person-years, annual mortality rates, and relative risks,  
by tobacco use, among Cohort Study women and men,  
Mumbai**

	No tobacco use	Smokeless tobacco*	Smoking
<b><u>Men</u></b>			
Person years	55,717	96,884	57,528
Deaths	854	1,787	1,478
Mortality rate (per 1000)	15.3	18.4	25.7
Crude	13.6	17.3	23.3
Age-adjusted			
Relative risk	1.0	1.26	1.65
95 % CI	-	1.18-1.34	1.57-1.74
<b><u>Women</u></b>			
Person years	130,294	191,625	1,398
Deaths	907	2,470	35
Mortality rate			
Crude	7.0	12.9	25.0
Age-adjusted	8.9	12.7	17.1
Relative risk	1.0	1.40	2.10
95 % CI	-	1.33-1.47	1.65-2.54

\* Non-smokers only.

**A COMPARISON OF AGE SPECIFIC DEATH RATES AFTER 5.5 YEARS FOLLOW-UP IN MUMBAI COHORT STUDY**

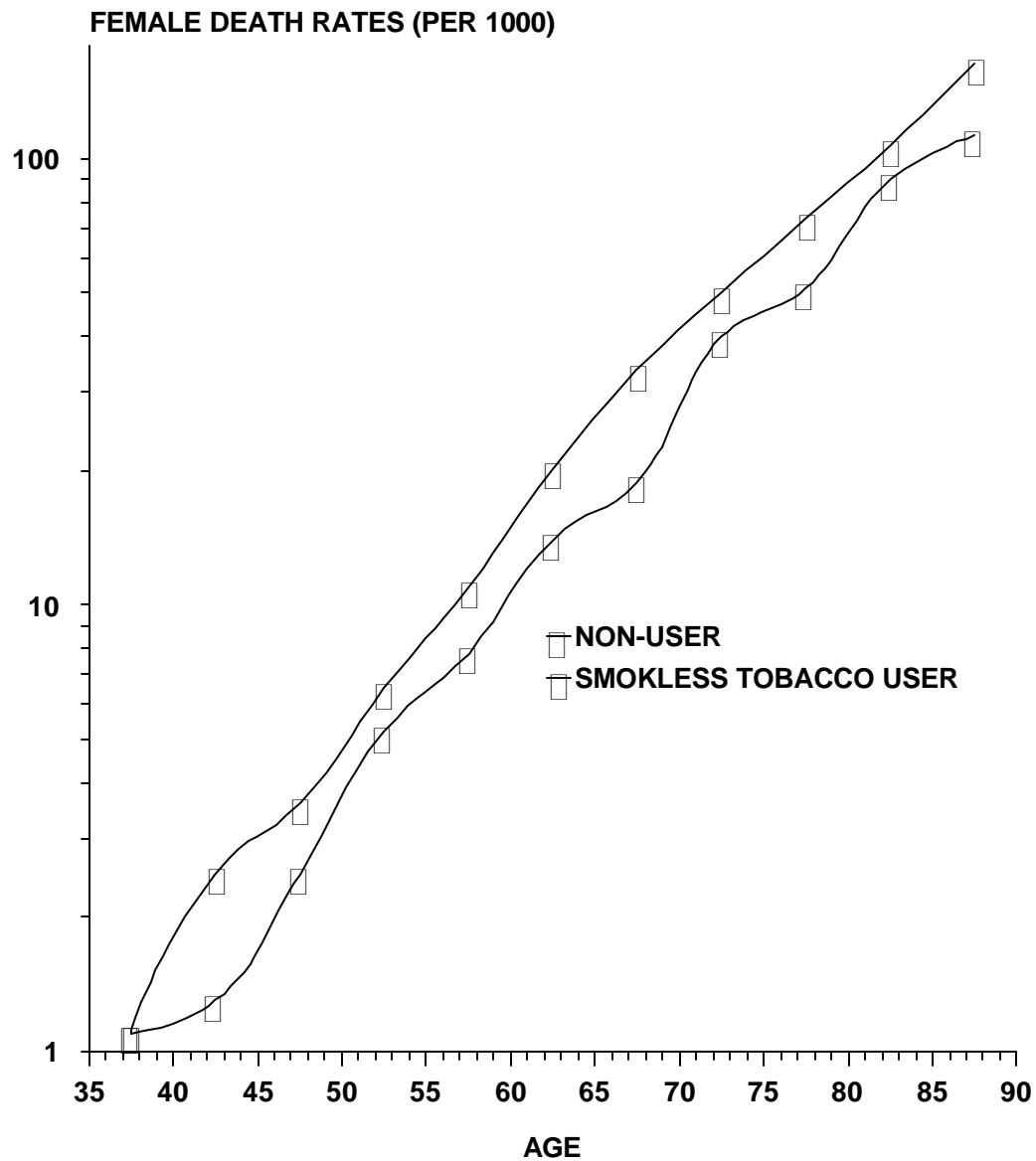


**Mortality rates and age-adjusted relative risks by type  
and frequency of smoking habit among Cohort Study  
men, Mumbai**

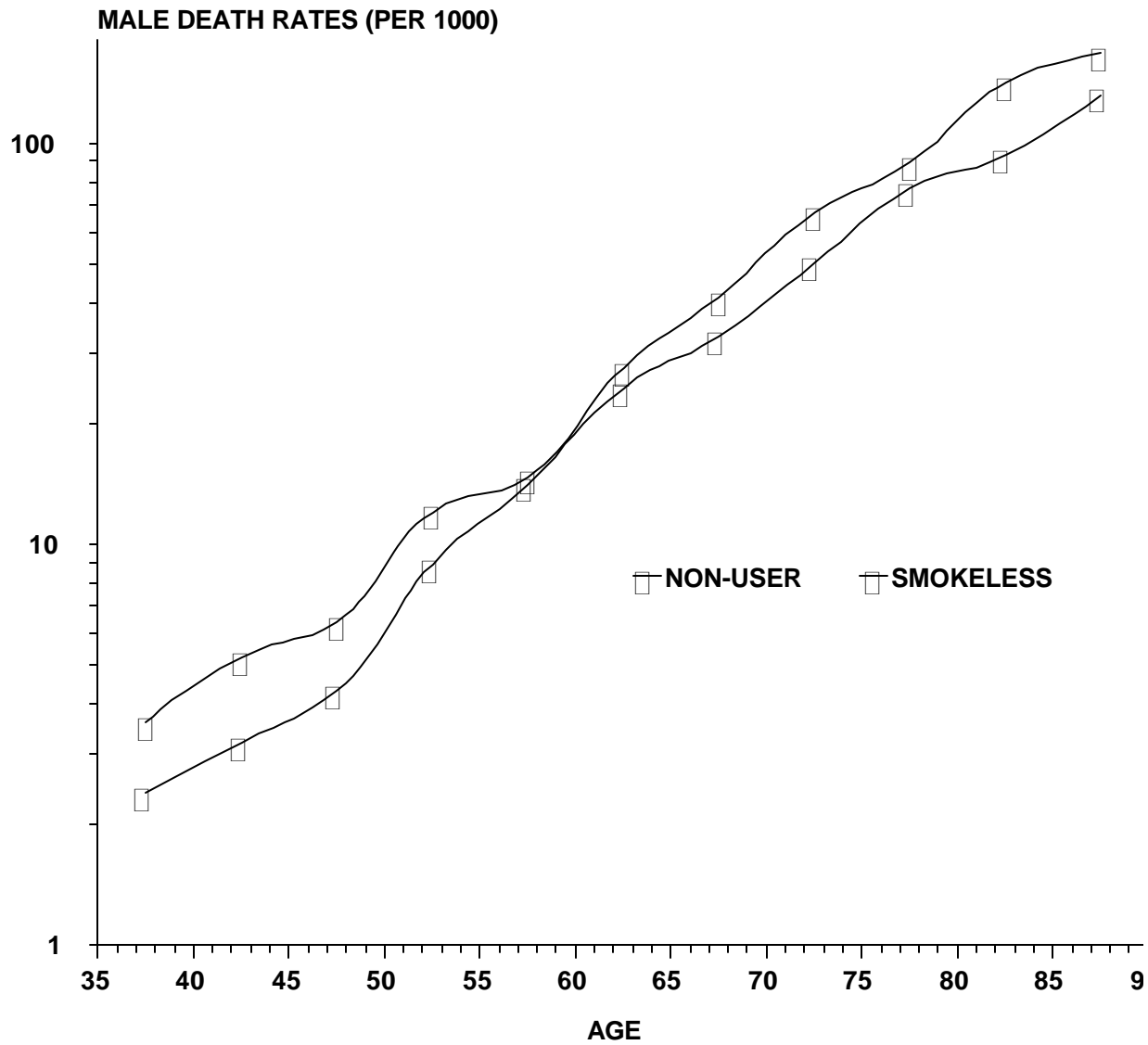
	Person years	Deaths	Mortality rate	Age- adjusted mortality rate	Age- adjusted relative risk	95 % CI
<i>Bidi</i> +*	31,376	982	31.3	26.5	1.93	1.84-2.03
Cigarette	26,152	496	19.0	18.9	1.42	1.30-1.54
<i>Bidi</i> +* frequency (per day)						
1-5	5,510	146	26.5	22.0	1.73	1.52-1.94
6 +	21,112	699	33.1	27.8	2.11	2.00-2.22
Cigarette frequency (per day)						
1-5	11,709	177	15.1	17.5	1.30	1.12-1.47
6 +	14,444	319	22.1	20.5	1.56	1.41-1.70
No tobacco use	55,717	854	15.3	13.6	1.00	-

\* Includes Bidi & other smoking

**A COMPARISON OF AGE SPECIFIC DEATH RATES AFTER 5.5 YEARS FOLLOW-UP IN MUMBAI COHORT STUDY**



# A COMPARISON OF AGE SPECIFIC DEATH RATES AFTER 5.5 YEARS OF FOLLOW-UP IN MUMBAI COHORT STUDY



**Mortality rates and age-adjusted relative risks, by type  
of smokeless tobacco habit, among Cohort Study  
women and men, Mumbai**

	Person years	Deaths	Mortality rate	Age- adjusted mortality rate	Age- adjusted relative risk	95 % CI
<b><u>Women</u></b>						
<i>Mishri</i>	88,002	743	8.4	12.3	1.38	1.28-1.48
<i>Mishri</i> +oth.	71,817	1,323	18.4	14.1	1.58	1.50-1.67
Betel-quid	20,153	236	11.7	9.8	1.11	0.96-1.26
Other tob.	5,020	80	15.9	14.1	1.78	1.50-2.06
Areca nut	6,633	88	13.3	9.9	1.14	0.91-1.37
No tobacco use	130,294	907	7.0	8.9	1.00	-
<b><u>Men</u></b>						
<i>Mishri</i>	14,658	226	15.4	16.1	1.19	1.03-1.34
<i>Mishri</i> +oth.	38,981	782	20.1	18.3	1.35	1.25-1.44
Betel-quid	24,368	436	17.9	16.2	1.20	1.08-1.32
Other tob.	17,039	316	18.5	18.5	1.40	1.26-1.54
Areca nut	1,838	27	14.7	11.5	0.81	0.47-1.16
No tobacco use	55,717	854	15.3	13.6	1.00	-

**Number of deaths, age adjusted RR and 95 % CI for  
Cancers of the upper aerodigestive tract**

Neoplasms	Smokeless			Smoker		
	Deaths	RR*	95% CI	Deaths	RR*	95% CI
All upper aero digestive tract						
Total (=162)	87	2.07 <sup>†</sup>	1.30-3.28	52	5.16 <sup>†</sup>	3.00-8.87
Male (=93)	32	1.67	0.82-3.41	51	4.38	2.22-8.64
Female (=69)	55	2.35	1.28-4.32	1	4.83	0.63-37.26
Lip, oral cavity and pharynx						
Total (=37)	17	2.97 <sup>†</sup>	0.87-10.14	17	12.87 <sup>†</sup>	3.39-48.81
Male (=24)	6	3.06	0.37-25.43	17	14.30	1.90-107.50
Female (=13)	11	2.89	0.64-13.05	0	-	-
Oesophagus						
Total (=55)	32	2.22 <sup>†</sup>	1.02-4.82	15	6.17 <sup>†</sup>	2.30-16.53
Male (=25)	8	1.35	0.36-5.10	14	3.89	1.12-13.54
Female (=30)	24	2.77	1.05-7.30	1	13.10	1.51-114.01
Larynx, bronchus and lung						
Total (=70)	38	1.75 <sup>†</sup>	0.91-3.35	20	3.02 <sup>†</sup>	1.40-6.53
Male (=44)	18	1.62	0.64-4.08	20	2.92	1.17-7.28
Female (=26)	20	1.82	0.73-4.58	0	-	-

\* Age adjusted RR

<sup>†</sup>Total RR is adjusted for sex as well