Smoking and Chewing Habits of People of Karachi - 1981

Pages with reference to book, From 34 To 37

Zahid Mahmood (Department of Statistics, University of Karachi, Karachi-32.)

Abstract

An attempt was made to know the behaviour of various habits, age and sex composition of the population. Results were quite encouraging. The age reporting was not upto the mark. The sex ratios were very erratic. It has been seen that habits are usually prevelant among males. This trend is continuing. The pan chewing among males is rising whereas it has slightly reduced among females. An alarming situation has been observed in smoking, that, it is on the increase among females. However, smoking is still the predominant habit of males (JPMA 32:34, 1982).

Introduction

In 1967 a multipurpose study was started at JPMC, Karachi to establish possible etiological factors associated with carcinoma cf the oral cavity and oropharynx. To establish the relative risks of different habits a survey of different localities of Karachi was undertaken during 1967 through 1972. The resuls of habits of 10,749 persons have been presented by Mahmood et al (1974) and the habits of carcinoma proven cases were compared by Jafary et al (l974).
A considerable time has passed since the last survey was conducted. It was, therefore, felt that the exercise should be repeated. Experience gained during the previous survey suggested a chang. in the questionnaire.

Material and Methods

The results analysed in the present paper pertains to the survey conducted by the students ot Department ot Statistics, University ot Karachi, Karachi, in partial tulfilment of their Sampling Technique Course 521, 522, during 980.These students were given a reduced form of a questionnaire (containing only 12 questions) used by the Pakistan Medical Research Council Tumour Study.
A method of quota cum-simple random sampling was used. This can also be viewed as stratified sampling with varying proportion of allocation. Groups comprising 2 or 3 students were made. These groups were then allocated the area of their residence, comprising enough numbers of houses. Students then prepared maps of the areas and completed frame taking house as a Sampling unit. A quota sample of 20 houses per student was fixed. Hence a group selected a simple random sample of size 204060 as the case may be, using Fisher and Yates Random Numbers Table (2) from their allocated arcas.
The areas of Karachi covered in this Survey arc being presented in Table 1 below:

Table I

Sampling Distribution.

	Area	*Total No. of Houses Nh*	*Sample Houses nh*
1.	PECHS. Block 6.	N.R.	40
2.	PECHS. Block 2.	489	60
3.	University Campus	325	20
4.	North Nazimabad. Block A. 400	400	40
5.	Federal 'B' Area Block 17.	1660	40
6.	Federal 'B' Area Block 12.	N.R.	20
7.	Federal 'B' Area Yusuf Plaza.	1135	40
8.	Federal Capital Area	808	40
9.	Usmania Colony	400	20
10.	H.S.R. Stadium Road	N.R.	40
11.	Jacob Lines	629	20
N.R.—Not Recorded		Total	380

According to the instructions one form was to be filled fir every adult (age 20 and over) residing in the housc. Accordingiy 990 forms were filled, which gave an average of 2.61 adults per house (1 .52 males± I .09 females).

A hand tabulation was done for age and sex distribution; combination of habits; quantity of pan chewed

per day; quantity of cigarettes smoked per day and combination of smokii.g habits. The totals of difrerent tables do not tally due to partial non response on the part respondents. However, in combination of habits table, total becomes slightly higher due to double classification of some individuals.

Results and Observations

Age and sex compositicn of the sample population of adults (Table II)

Table I Sampling Distribution.

	Area	*Total No. of Houses Nh*	*Sample Houses nh*
1.	PECHS. Block 6.	N.R.	40
2.	PECHS. Block 2.	489	60
3.	University Campus	325	20
4.	North Nazimabad. Block A. 400	400	40
5.	Federal 'B' Area Block 17.	1660	40
6.	Federal 'B' Area Block 12.	N.R.	20
7.	Federal 'B' Area Yusuf Plaza.	1135	40
8.	Federal Capital Area	808	40
9.	Usmania Colony	400	20
10.	H.S.R. Stadium Road	N.R.	40
11.	Jacob Lines	629	20
N.R.—Not Recorded		Total	380

gave a sex ratio of 138. 75, which is higher than 117.28 found an earlier, similar study (Mahmood ct al 1974).

Combination of habits arc given in Table III,

Table III

Distribution of Combination of Habits by Sex in Percentages.

	Habits No.	MALE No.	MALE %	FEMALE No.	FEMALE %	TOTAL No.	TOTAL %
A.	No. Habit	235	23.24	261	25.82	496	49.06
1.	Pan	64	6.33	87	8.61	151	14.94
2.	Tobacco chewing	8	0.79	2	0.20	10	0.99
3.	Smoking	162	16.02	19	1.88	181	17.90
4.	Pan+Tobacco Chewing	23	2.25	43	4.25	66	6.53
5.	Pan+Smoking	85	8.41	4	0.40	89	8.80
6.	Tobacco Chewing+Smoking	8	0.79	4	0.40	12	1.19
7.	All three Habits	6	0.59	—	—	6	0.59
B.	Sub Total 1-7	356	35.21	159	15.73	515	50.94
Total A+B=		591	58.46	420	41.54	1011	100.00

Percentage totals may not be exact due to separate calculation.

frequency and overall percentages have been tabulated in two partS. Part A fbr no habit and part B for difrerent habits and their total. No Habit and day Habib is tested for association with sex, through X^2 test. X^2 calculated was found as 49 .20; which is when compared with critical X^2=3 .84, the null assumption of independency between the attributes is rejected. The presence of a habit is influenced by the sex, and it is the male population which has a highar proportion of habituals.

Quantity of Pan

Information was gathered from the Pan chewers about the quantity of Pan (number) chewed per day. Classification was done with same grouping as used in earlier study.

Table IV
Quantity of Pan chewed per day

Pan chewed	*Male*	*Female*
A:O	384	298
1-10	111	108
11-20	20	23
21-30	4	5
31-40	7	5
41-50	0	1
B: Sub Total	142	142
Total A+B	526	440

Table IV gives the distribution of pan chewed per day along with frequency for non pan chewers showing as 0.

Average among pan chewers was found for males as 8.95 with standard error=0 .6381; and for female, average was 9.16 with SE =0.6491 Test of independence was performed for pan chewers/No pan chewers with sex. X^2 was found as 3.21 with 1 d.f, which is less than critical X^2=3 .84. Hence we conclude that the habit of pan chewing is independent of sex. Both sexes chew pan with same proportions.

Quantity of cigarettes:

Similar information on smoking was taken and results are presented in Table V below:

Table V

Quantity of Cigarettes Smoked per day.

Cigarettes smoked	*Male*	*Femlae*
A:O	320	390
1-10	109	11
11-20	98	2
21-30	21	1
31-40	14	0
41-50	6	0
51-60	3	3
B: Sub Total	251	17
Total A+B	571	407

Average among smokers was found as 14.31 cigarettes per day for males with SE =0.6719; and for females average was 16.68 with SE= 7. 1294; Tne Higher average for females is due to some erratic behaviour as its S.E. is also very high.

Test of independence between sex smokers/non smokers showed X^2= 189.03 I.d.f.Compared with critical X^2=3 .84, hypothesis of independence is rejected. males are the overwhelming smokers in society.

Combination of Smoking: In the sample other forms of smoking i.e. Bidi, Cigar, Pipe, Hookah, were recorded in frequently. Therefore the tabulation of combination of habits is not being presented here.

Comparison

Comparison between 1967-72 and 1980 survey results can be possible for those questions which are common in both. Detailed comparison is not made over here. We confined ourselves to comparing few proportions for their significant difference; i.e. the change, over the passage of time.

Sample sizes $n_1 = 978$ and $n_2 = 10{,}698$ are quite large, to take the assumption of Normality. The test statistic calculated:

$$Z = \frac{P_1 - P_2}{\sqrt{\bar{p}(1-\bar{p})\left(\frac{1}{n_1} + \frac{1}{n_2}\right)}}$$

Where p_1 is proportion in first sample (1980) of

$$\text{ahabit} = \frac{A_1}{n_1}$$

P_2 is proportion in second sample (1972)

$$\text{of a habit} = \frac{A_2}{n_2}$$

$$\bar{p} = \frac{A_1 + A_2}{n_1 + n_2}$$: the average proportion.

Sample sizes n1=978 and n2=10,698 arc quite large, to take the assumption of Normality. The test statistic calculated:

A. No Habit

Sex	SAMPLE 1		SAMPLE 2		$\bar{p}$	Z
	p^1	n^1	p^2	n^2		
Male	3976	591	3685	5802	3712	1 392
Female	6214	420	5682	4947	5724	2 111

B. Smoking

Sex	SAMPLE 1		SAMPLE 2		$\bar{p}$	Z
	$\hat{p}_1$	n_1	$\hat{p}_2$	n_2		
Male	.4396	571	.4630	5771	.4609	1.068
Female.	.0418	407	.0252	4927	.0265	2.000

C. Pan Chewing

Sex	SAMPLE 1		SAMPLE 2		$\bar{p}$	Z
	p^1	n^1	p^2	n^2		
Male	0 2700	526	2562	5543	.2574	0 694
Female	0 3227	440	3551	4706	.3523	1 361

Z is normally distributed and will have value as 1 .96 for 95% probability or 5% level of significance. The Z for females comes out to be significant. This means that the propcrtion of No Habit in females in two samples are different. We see that no habit proportion for 1980 sample is higher, hence we conclude that there is a tendency in females not to adopt any habit.

In this case also Z is h;gher than critical Z for females. The proportion of 1980 Survey (.0418) is higher than proportion of 1972 survey (0.0252) and are significantly different. This is an alarming situation as the smoking is on the increase in females. In case of male there is no change in smoking pattern. During the intervening period the government has ordered to print on cigarette packets that, it is hazardous, has made no impact as the two proportions are insignificantly different.

The proportions of Pan chewing are not significantly different in both sexes. However, the proportion in males is higher in 1980 survey and proportion in females is lower in the same survey.

References

1. Fisher, LA. Statistical tables Oliver and Royal, London. Fisher, LA. Statistical methods for research workers. 14th ed. Edinburgh, Oliver and Boyd, 1970, p. 92.

2. Jafarey, N.A., Mahmood, Z. and Zaidi, S.H.M. (1977) Habits and dietary pattern of cases of

carcinoma of the oral cavity and Oropharynx. JPMA., 27:340.
3. Mabmood, Jafarey, N.A., Samiinuddin, M., Rais, A.K., Malik, S. and Qureshi, S.A. (1974) Dietary and other habits of the people of Karachi. JPMA 24:222.