CORRESPONDENCE

SOME COMMENTS ON "THE SURVEY ON THE PREVALENCE OF SYPHILIS IN A RAILAWAY COLONY, LUCKNOW."

Sir,

The article on the above subject by Kapoor and Prasad, published in the Indian Journal of Dermatology and Venereology, Vol : 30, No : 1, Jan-Feb 1964, is thought provoking and adds information to the prevalence of syphilis in a selective group of residents in a railway colony. A perusal of the above paper does not make it clear how far necessary statistical assistance was taken in the planning of the survey or in the ultimate analysis of data. Perhaps this may be a reason why some of the conclusions arrived at by the authors are at a variance in important aspects with the studies already made.[2,3,4]

In the above study, the sampling frame is the residents of the railway colony and the representation of different types of flats in the surveyed group is not either equal or according to the existing proportion shown in the table. The percentages of the various types of flats surveyed is as follows : (Not shown in table I)

Type I : 50%; Type II : 70%; Type III : 90%;

Type IV : 84%; Type V : 100%;

The above percentages are not shown in the table and as such the fact that unequal representation of different flats was given has perhaps escaped notice and as a consequence, the sample cannot be considered representative of the population (Railway Colony). As such the basis for proper inference is vitiated and the conclusions drawn cannot be quiet valid. The survey has achieved to detect the existing cases in terms of seropositivity and served as a case-finding programme and not estimating the prevalence of syphilis in the railway colony, or comparing the situation in one age group with another. If the basic structure of sample was according to the statistical techniques, the above survey would have shown excellent results.

In table 2, many conclusions were drawn. When the equal number of persons were not in the various age groups, the calculation of percentages in the horizontal direction are not only erratic, but also lead to conclusions which are not valid. When the number of patients in the age group are not equal, it is necessary to calculate the percentages in vertical direction to find out the distribution of total patients in the various age groups. Because of not doing this, it was concluded that " the age group 50-54 years showed the highest prevalence among the males. " Even if one is to proceed purely on the basis of the sample though not representative, the analysis as shown in the following tables, present a comparison and elucidate epidemiological results in the relevant groups.

Age Group	Number	Percent
20–24	10	12.2
25–29	16	19.5
30–34	13	15.9
35–39	17	20.7
40–44	11	13.4
45–49	7	8.5
50–54	7	8.5
55–59	1	1.2
Total	82	100.0

It can be seen from the above table that 68% of the total patients were between the age 20 to 39 years. The mean was calculated by me as 35.5 years with a standard deviation of 9.2 years. If the confidence intervals for the mean are taken as 35.5 ± 9.2 (26.3 to 44.7 years), 69.5% of the patients were between these ages. This conclusion that the venereal syphilis is associated with the active sex period of life, is according to the epidemiology of syphilis and also to the finding made by Tampi and Rao (1956) (Mean: 29 years and S. D.: 9.3 years). If it is the intention of the authors to calculate the age specific rates of prevalence, it can be achieved only if there is equal representation in all the age groups or alternately changing to normal population by statistical techniques.

In table 3 also, the percentages are not shown in vertical direction. To determine the specific rates of sero positivity in different religions, equal representation of the groups is essential. The distribution of cases according to religion would work out as follows :—

Religion	TOTAL		SAMPLE	
	Number	Percent	Number	Percent
Hindu	3209	93.2	83	69.2
Muslims	105	5.4	27	22.5
X-ians	25	1.4	10	8.3
Total	3339	100.0	120	100.0

In view of the reason that the sampling frame was defective, we cannot draw any conclusions from the table. From a correct sampling frame, we could have stated that muslims showed a positivity rate 4 times the normal proportion and christians showed a positivity rate of six times.

Similar remarks apply to table 4 also. The calculation of range of prevalence percentage is not valid in view of the defective sampling frame. The occupations should have been grouped under a defined structure such as unskilled, skilled, clerical, officers, domestic, students, etc. as in the study made by Tampi

and Rao (1958). The vertical percentages showing the distribution of sero-reactors into various occupational groups were not shown by the authors. This seems to be as follows :

S. No. as shown in the paper	Occupation	Number	Percent
2	Student	1	0.83
3	Children	3	2.5
4	House-wife	32	26.7
5	Medical	1	0.83
6	Electrician	2	1.66
7	Clerks	13	10.8
8	Chargemen	6	5.00
9	Linemen	3	2.5
10	Gangmen	2	1.66
11	Fitter Workers	9	7.5
12	Unemployed	1	0.83
13	Guards and T. T. E.	7	5.9
14	Drivers	3	2.5
15	Khalasies	22	18.3
16	Labour and Work Inspector	2	1.66
17	R. P. F. Men	5	4.2
18	Sweepers	8	6.7
	Total	120	100.0

The above occupations when combined into different groups would be:

Occupational Group	Number	Percent
Domestic (4)	32	26.7
Unskilled (15, 18)	30	25.0
Skilled (6, 8, 9, 10, 11, 14, 17)	30	25.0
Junior Officials (7, 13)	20	16.7
Officers (5, 16)	3	2.5
Children (3)	3	2.5
Student (2)	1	0.8
Unemployed (12)	1	0 8
Total	120	100.0

The above findings are in conformity with the study of Tampi and Rao (1958) who found that 27% of the patients were Domestic, 20.6% were unskilled; Skilled 16.4% and 19.1% were office workers.

In table 5, the vertical percentages were calculated for surveyed population, but not for positive cases. The same will be as follows :

Earning status	Positive Cases	
	Number	Percent
Earners	82	68.3
Earning dependents	1	0.8
Non-earning dependents	37	30.9
Total	120	100.0

As expected normally, the earners category showed a majority in the total patients.

In table 6, per capita income is taken. It is presumed that the numbar of members in the family was considered for determining the same. From the income of the head of the household, the standard of living of all the family members can be known, and as such in most of the publications the monthly income is considered rather than the per capita income. In this table also, the vertical percentage were calculated for the population surveyed but not for the positive cases.

Social Class	Number	Percent
I	23	19.09
II	47	39.0
III	25	20.7
IV	12	1.9
V	13	10.8
Total	120	100

When the above percentages are calculated, it can be seen that of the total patients, the per capita income was Rs. 100 and over in 19% of the patients. The income was found to be between Rs. 50 and Rs. 99 in 39% of the total patients. The conclusions drawn on the table are contradictory and shows that syphilis is more prevalent in the higher income groups rather than the low income groups. This erroneous conclusion may be do to the under-representation on the Type I flats in the colony.

In table 7 also, the percentages in the vertical direction were not calculated.

Education	Number	Percent
Illiterate	33	27.7
Just literate	15	12.6
Primary school	13	10.9
Junior School	12	10.1
High School	20	16.8
University	9	7.6
Tech. Trained	17	14.3
Total	119	100.0

The above analysis shown that 27.7% were illiterates, 16.8% studied upto high school and 14.3% wese technically trained. When the sample is not random, we cannot draw any conclusions.

In table 8 also the percentages were not calculated vertically.

Marital Status	Positive Cases	
	Number	Percent
Unmarried	26	21.6
Married	81	66.4
Widowed	13	12.0
Total	120	100.0

The above findings are in conformity to the study of Tampi and Rao (1958) that majority of the patients were married.

The analysis of table 9 would have been done as follows: No addiction 71 cases or 59.2% and addiction in 49 cases or 40.8%.

The addicted cases would have been analysed as follows:

Addiction	Positive Cases	
	Number	Percent
Alcohol	25	51.0
Toddy	8	16.3
Bhang	1	2.0
Tobacco	15	30.6
Total	49	99.9

In tables 10 to 15, the percentages were calculated in vertical direction and as a statistician I have nothing to add.

The conclusion that 3.5% was found as sero-reactivity cannot be accepted as correct. The data requires a thorough revision to conform to 50% inclusion of flats of Type II to Type V, as in Type I, the exclusion of cases being by a random method.

Venereal Diseases Training Centre.
Safdarjang Hospital. New Delhi-16.

M. SESHAGIRI RAO.

REFERENCES

1. Kapoor, O. P. and Prasad, B. G.: A survey on the Prevalence of Syphilis in a railway colony, Lucknow. Ind. Jr. of Dermat. & Vene., Vol. 30, 1, 1964.
2. Tampi, R. B. and Rao, M. S.: A preliminary study on the age and sex distribution of VD patients. Ind. Jr. of Dermat. & Vene., Vol. 23, 4. 1956.
3. Tampi, R. B and Rao, M: S.: Marital Status and prevalence of Venereal Diseases. Ind. Jr. of Dermat. & Vene., Vol. 24, 1, 1958.
4 Tampi, R. B. and Rao, M. S.: Occupational status and prevalence of Venereal Diseases. Ind. Jr. of Dermat. & Vene., Vol. 24, 4, 1958.