SOCIO-ECONOMIC PROFILES OF WOMEN WITH CANCER CERVIX, DYSPLASIA AND A CONTROL GROUP†

(A Comparative Study of Single and Multiple Variables)

by

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The epidemiological factors responsible for the development of cervical cancer are well known. Rotkin (1973) has reviewed the studies conducted on the epidemiology and has identified those risk factors which are more significant than others.

It is the life style of a given community which determines the occurence of cancer cervix in that community. These variations in life styles of different communities are important aspects of human behaviour. It is these which give a human being caltural background and ethnic identity. Whereas very little can be done to change the habits and customs, it is necessary to understand which of the customs is harmful in a given society. It is upto the social reformers to suggest corrective measures which will then form a part of Cancer Prophylaxis.

However, the knowledge of risk factors can be put to "practical" use by determining the high-risk in a given community and preventing the development of cancer in them. Invasive cancer can be prevented by periodic cytological screening but it is unrealistic to expect all the women to be under strict surveillance. It is however possible to first determine the high-risk group in a given community and concentrate on their follow-up.

This practical application of combination of epidemiology and cytology was suggested by Pauli in 1978.

In our study in Bombay we have been able to combine these two disciplines to evolve a more successful screening programme.

We have analysed the effect of certain known variables or risk factors which we feel were significant in our population.

These factors have to be quantified and besides that they have to be considered independently and also together on a multidimensional basis.

Material and Methods

The material included in this study consists of control cases 105 which were selected from our rescreening programme supported by ICMR. Only those cases who had been normal for 3 years were included. One hundred and five cases showing varying grades of dysplasia and 76 cases of proved cervical cancer were compared.

The statistical analysis was carried out by the Biostatistician from Tata Institute of Fundamental Research.

Table I analyses the results on the basis of age at marriage. Rotkin (1973) has stated that sexual initiation before the age of 17 years was the most significant in all the studies reviewed by him.

46.5% of controls and 47.6% of dysplasias were married after the age of 17 years as opposed to only 26.2% of cancer cases. Whereas 35% of controls and 31% of dysplasia were married between the ages of 14 and 16, as many as 60% of cancers were married in that age group.

The figures for marriage below the age of 13 years are not significant because it probably does not coincide with age of sexual initiation.

These figures have been found to be statistically significant.

The figures are almost similar for dysplasia and controls showing that perhaps this factor does not influence much the development of dysplasia.

However, if one compares the controls with cancer group it is obvious that a significant number have been married early.

Table II gives the results on the basis of years of married life. Age of the respondent minus the age at marriage gives the years of married life. We have considered this variable more significant than the age of the patient. Here we are able to assess the effect of prolonged sexual activity.

Only 2% of controls and 5% of dysplasia had been married for over 40 years and 7.8% of cancers were married for that long.

15% of control and 13% of dysplasia were married between 30-39 years, whereas 26% of cancer were married that long.

28% of control and 30% of dysplasia were married between 20-29 years, whereas 40% of cancers were married for that duration.

TABLE I
Age at Marriage

Age at marriage	Cancer Group %	Dysplasia Group %	Control Group %
Below 13 years	13.2	20.9	18.1
14-16 years	60.4	31.2	35.1
17 years and above	26.2	47.6	46.5

$X^2 = 18.18$ $P < .01$

TABLE II
Number of Years of Married Life

No. of years of married life	Cancer Group %	Dysplasia Group %	Control Group %
Less than 19 years	25	51.3	54.3
20-29 years	40.8	30.4	28.6
30-39 years	26.3	13.0	15.2
40 years and above	7.8	5.1	2.0

$X^2 = 28.57$ $P < .01$

54% of control and 51% of dysplasia were married for 19 years or less, whereas 25% of cancers had been married for that long.

These findings too were found to be statistically significant. The findings for dysplasia and controls run parallel, whereas the figures for cancers are different.

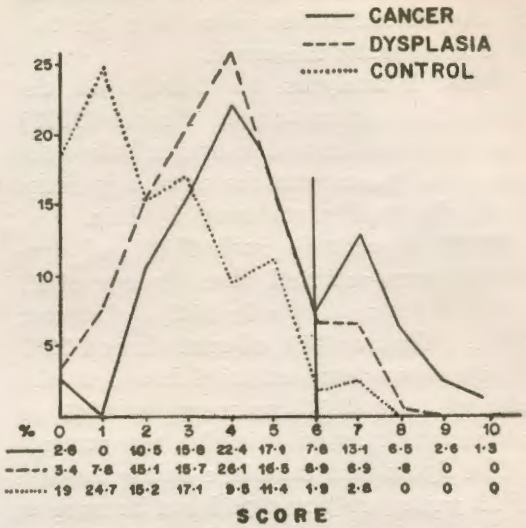
Table III analyses the gravidity. 28% of controls and 32% of dysplasia had 5 or more children, whereas 57% of cancers fell in that category.

On this basis too, figures are identical for dysplasia and control, but figures are reversed when one compares cancer versus controls showing that gravidity does influence towards the development of cancer.

So far all the cases were analysed taking one variable into consideration. To predict the type of person who is at greater risk to develop cancer, multivariable analysis quantifying each variable was necessary. This was done by giving each case a score. This scoring system was devised by us in 1976.

We believe that the more the risk factors present which individually encourage the development of cancer, greater the risk of that woman developing the lesion.

After determining the score for each case, a graph was plotted, of scores against the number of cases. Figure I gives the graph.



The left side of the graph is mainly concentrated in controls and as one moves towards the right, the zone of high score, more cases of dysplasia and cancer are seen.

All cases which fall to the right of the vertical line, constitute the high-risk group and should be kept under strict follow-up. Although they may be normal at present, they have too many factors against them.

The other feature which is noticeable in this group is that here the graphs of dysplasias and controls do not run parallel. This is because when all the factors are combined the other risk factors like infection, malnutrition, tricho-

TABLE III
Gravidity

Gravidity	Group Cancer %	Dysplasia Group %	Control Group %
O-IV	42.1	67.8	72.1
V and above	57.8	32.0	28.7

$X^2 = 19.31$ $P < .01$

monal infection etc. contribute significantly to the development of dysplasia.

This is borne out in clinical experience too. Correction of these health factors is reasonably easy and does lead to regression of dysplasia.

We have the Sharda Act in India. Unfortunately it is not respected. Strict adherence to the age of marriage at 18 years would make an impact on the occurrence of Cancer Cervix.

To summarise:

1. In addition to single variables, a multi dimensional study of variables would be more valuable.

2. The high-risk from our population should be carefully selected.

3. Cytology screening should be intensive for the high risk.

4. Finally, strict adherence to Sharda Act, control of fertility and prompt treatment of infections are important factors which will lead to a decrease in the occurrence of Cervical Cancer in our community.

References

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