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A Clinico-Epidemiological Study of Cervical Cancer and Pre-Cancer with Special Reference to South-Eastern Part of west Bengal

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Abstract: *The purpose of this study was to measure prevalence,attributable risk,relative risk for cervical cancer in a population for different clinicoepidemiological parameters and finding some significant risk factors for cervical cancer.Using a manual and computerised statistical method this study based on a cross sectional study on outdoor patients from a tertiary healthcare centre(NRS Medical college and hospital).In this study In our study, a chart was prepared based on different clinicoepidemiological parameters(occupation,Age,Marital status,Monthly Income,Age of 1st sexual intercourse,Nos. of sex partners,Nos. of children,Nos. of abortion,Use of condom,Use contraceptive measure,use of napkin,Presence of white discharge,Smoking habit,Betel/Tobacco chewing,Family h/o cancer and white discharge, Educational Qualification, awareness of cause, sign, symptom, prevention, Awareness about multiple partner is a risk factor Access to nearest PHC,Maintaining personal hygiene,Aware of warning signals,Location of residence,Religion,undergone regular physical examination,status of pregnancy,Time of 1st delivery after marriage,Presence of symptoms,Per speculum examination,Attitudes and beliefs about cervical cancer and pap test,Pap smear results,Receiving prenatal care).Information about the parameters are obtained from the patients by questioning them directly.*
For a particular patient, if a certain subclass of parameter is present, that subclass is marked as "1" in a excel sheet and spaces for other subclasses are kept blank.During statistical analysis, blank spaces are filled with '0's. Nos. of patients in each subparameters are calculated.Prevalence of cervical cancer for each subparameters are calculated.For each parameters, related attributable risk and relative risk are calculated.Thereafter by a Software(SPSS) some significant risk factors are found out.Those are Age>39 years,specific Marital status(married,widow),specific Monthly income (in indian rupees1001-2000),Family history of cancer,specific Source of information about cervical cancer(relative),Presence of smoking habit,specific Educational Qualification- studied upto 1-4,specific Status of pregnancy(never been pregnant at all),specific Time of delivery after marriage(>4 years).

I. Introduction

Epidemiology is "the study of the distribution & determinants of disease frequency" in human population. In epidemiological observations, the quality of data are commonly described with use of 4 terms (accuracy, validity, precision, reliability). Before a disease to be treated, it is important to detect it. So, case detection is important rather than clinical detection. Studies in which different definitions are used may lead to different conclusions. In principle, the variables that are basis for diagnosis are symptoms, signs, tests. Accuracy of examining the sign is dependent on Inter-observer variation and Intra-observer variation. There are different types of epidemiological studies e.g. case-control, cohort, cross-sectional, case-series, outbreak investigation etc. Case-series may refer to the qualitative study of the experience of a single patient, or small group of patients with a similar diagnosis, or to a statistical technique comparing periods during which patients are exposed to some factor with the potential to produce illness with periods when they are unexposed. Case control studies select subjects based on their disease status. It is a retrospective study. A group of individuals that are disease positive (the "case" group) is compared with a group of disease negative individuals (the "control" group).

The control group should ideally come from the same population that gave rise to the cases. The case control study looks back through time at potential exposures that both groups (cases and controls) may have encountered. A 2×2 table is constructed, displaying exposed cases (A), exposed controls (B), unexposed cases (C) and unexposed controls (D). The statistic generated to measure association is the odds ratio (OR), which is the ratio of the odds of exposure in the cases (A/C) to the odds of exposure in the controls (B/D), i.e. OR = (AD/BC). Cohort studies select subjects based on their exposure status. The study subjects should be at risk of the outcome under investigation at the beginning of the cohort study; this usually means that they should be disease free when the cohort study starts. The cohort is followed through time to assess their later outcome status. An example of a cohort study would be the investigation of a cohort of smokers and non-smokers over time to estimate the incidence of lung cancer. The same 2×2 table is constructed as with the case control study. However, the point estimate generated is the relative risk (RR), which is the probability of disease for a person in the exposed group, Pe = A / (A + B) over the probability of disease for a person in the unexposed group, Pu = C / (C + D), i.e. RR = Pe / Pu. In epidemiology, an outbreak is an occurrence of disease greater than expected at a particular time and place. It may affect a small and localized group or impact upon thousands of people across an entire continent. Two linked cases of a rare infectious disease may be sufficient to constitute an outbreak. Outbreaks may also refer to epidemics, which affect a region in a country or a group of countries, or pandemics, which describe global disease outbreaks. In medical research and social science, a cross-sectional study (also known as a cross-sectional analysis, transversal study, prevalence study) is a type of observational study that involves the analysis of data collected from a population, or a representative subset, at one specific point in time—that is, cross-sectional data.(1)Our study is a cross-sectional study.

II. Materials And Methods

In our study, a chart was prepared based on different clinicoepidemiological parameters(Occupation,age,marital status,monthly Income,age of 1st sexual intercourse,nos. of sex partners,nos. of children,nos. of abortion,use of condom,use of contraceptive measure,use of napkin,presence of white discharge,smoking habit,betel/Tobacco chewing,family h/o cancer and white discharge,educational Qualification,awareness about cause,sign,symptom,prevention,pap test,source of information about cervical cancer,willingness to undergo Pap test,awareness of HPV vaccine,awareness about multiple partner is a risk factor,access to nearest PHC,maintains personal hygiene,awareness of warning signals,location of residence,religion,undergone regular physical examination,status of pregnancy,time of 1st delivery after marriage,presence of symptoms, per speculum examination,attitudes and beliefs about cervical cancer and pap test,pap smear results, receiving prenatal care)(2,3,4).

Information Gathering From Patients :

Information about the parameters are obtained from the patients by questioning them directly.For a particular patient, if a certain subclass of parameter is present, that subclass is marked as "1" in a excel sheet and spaces for other subclasses are kept blank.During statistical analysis, blank spaces are filled with '0's

Summarizing The Parameters :

Nos. of patients in each subparameters are calculated.Prevalence of cervical cancer for each subparameters are calculated.For each parameters, related attributable risk and relative risk are calculated.

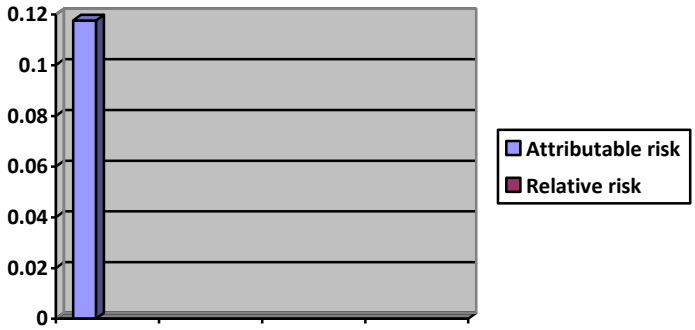
III. Result & Discussion

3.1. Prevalence of cervical cancer as a whole = 11.66%

3.2 If specific occupation(Skilled labour,unskilled labour,housewife) are exposing factor for cervical cancer

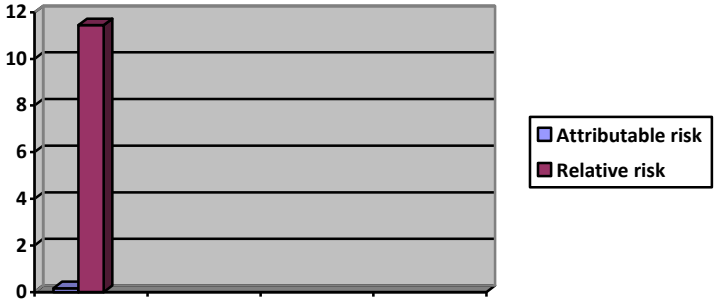
Attributable Risk = (Incidence in exposed- Incidence in unexposed) = 0.1176

Relative Risk = (Incidence in exposed/Incidence in unexposed) = α (infinity),infinite relative risk means hypothetical risk factors are very strong risk factors for cervical cancer in this population.

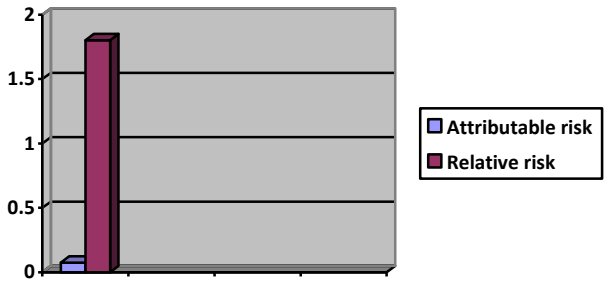


3.3. If specific age group(>39 years) is a risk factor for cervical cancer

Attributable Risk = 0.1629, Relative Risk =11.4423

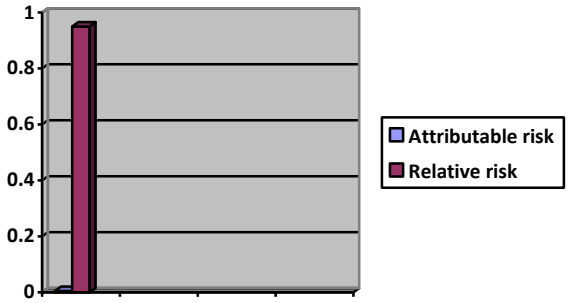


3.4. If specific marital status (Divorced,Single) is risk factor for cervical cancer
Attributable Risk = 0.0741, Relative Risk = 1.8010



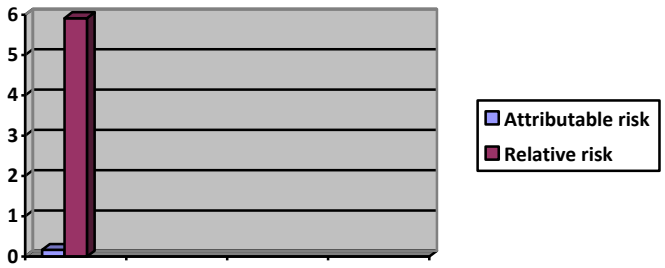
3.5. If specific range of monthly income(<1000,1001-2000,2001-3000) are risk factor for cervical cancer,Attributable Risk = 0.0584, Relative Risk = 1.8179

3.6. If specific age for first sexual intercourse(<13,14-18) is a risk Factor for cervical cancer, Attributable Risk = 0.0051, Relative Risk = 0.9508



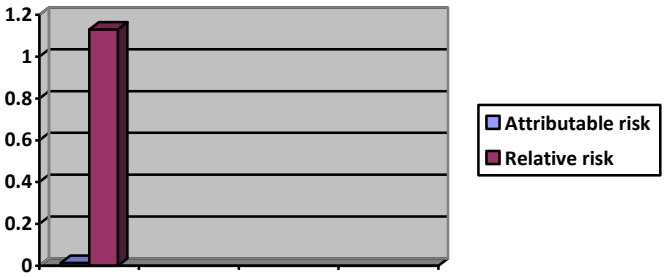
3.7. If specific nos. of sex partners(2,3) are risk factor for cervical cancer, Attributable Risk = 0.0571, Relative Risk = 2.0574

3.8. If specific nos. of children(3,>3) are risk Factor for cervical cancer,Attributable Risk = 0.171, Relative Risk = 5.9137

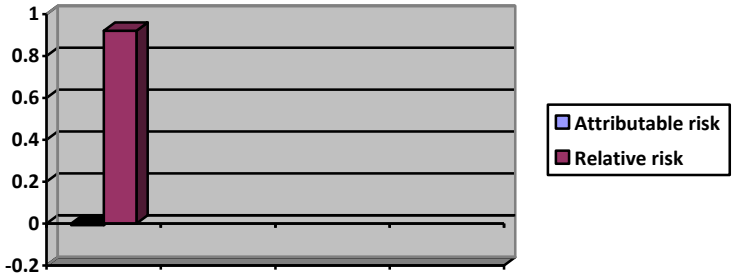


3.9. If specific nos. of abortion(1,2,3) are risk factor for cervical cancer,Attributable Risk = 0.022,Relative Risk = 1.224.

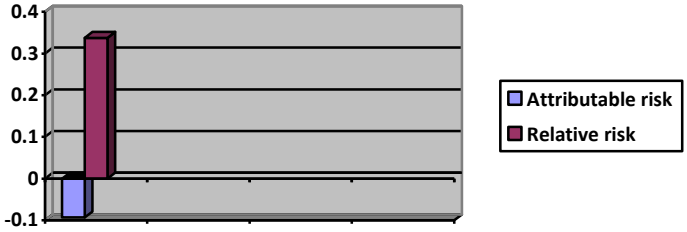
3.9. If no use of condom is a risk factor for cervical cancer,Attributable Risk = 0.0136, Relative Risk = 1.1292



3.10. If no use of contraceptive method is a risk factor for cervical cancer,Attributable Risk = - 0.0075, Relative Risk = 0.9212, Negative attributable risk means no use of contraceptive method is not a risk factor for cervical cancer.

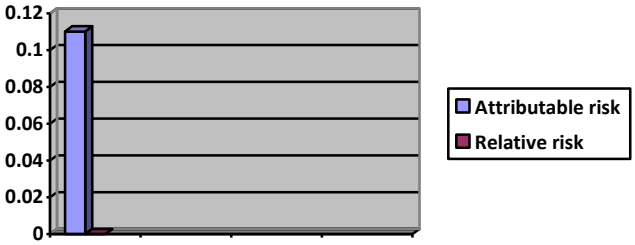


3.11. If branded napkin user are at high risk for developing cervical cancer,Attributable Risk = - 0.0934, Relative Risk = 0.3375,negative attributable risk means use of branded napkin is not an risk factor for cervical cancer.



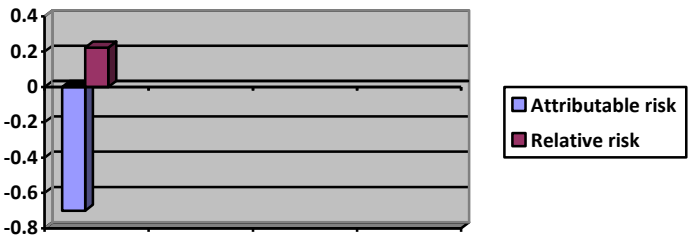
3.12. If presence of white discharge is a risk factor for cervical cancer,Attributable Risk = 0.1016,Relative Risk = α,infinite relative risk means hypothetical risk factors are very strong risk factors for cervical cancer in this population.

3.13. If smoking is a risk factor for cervical cancer,Attributable Risk = 0.1101,Relative Risk = 0

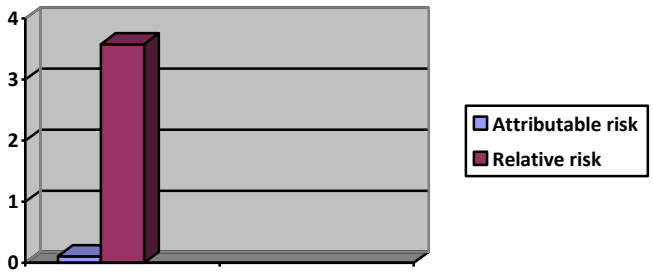


3.14. If betel and tobacco chewing is a risk factor for cervical cancer,Attributable Risk = 0.0286,Relative Risk = 1.2731

3.15. If family history of cancer is a risk factor for cervical cancer,Attributable Risk = - 0.7,Relative Risk = 0.2222,Negative attributable risk means family history of cancer is not a risk factor for cervical cancer in this population.



3.16. If specific educational qualification(Illiterate, just literate, studied upto 1-4) are risk factor for cervical cancer ,Attributable Risk = 0.1073, Relative Risk = 3.5793



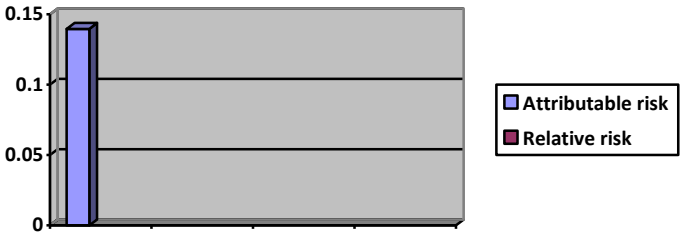
3.17. If no awareness about cause,sign,symptom are risk factor for cervical cancer,Attributable risk = 0.1061, Relative risk = α,infinite relative risk means hypothetical risk factors are very strong risk factors for cervical cancer in this population.

3.18. Patients who got information from health worker,TV,Radio are more conscious about cervical cancer. Our hypothesis is Getting information from friend and relative is a risk factor for cervical cancer,Attributable risk = 0.0159, Relative Risk = 0

3.19. If no willingness to undergo pap test is a risk factor for cervical cancer,Attributable Risk = 0.0831, Relative risk = 2.6280

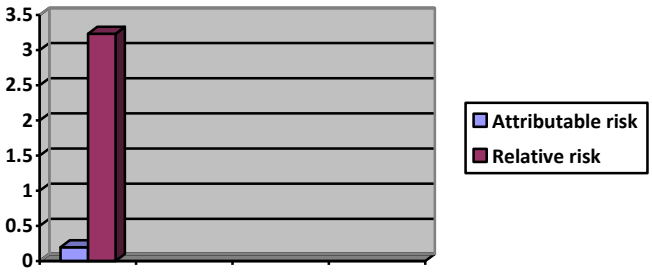
3.20. If no awareness about HPV vaccine is a risk factor for cervical cancer,Attributable risk = 0.1101,Relative Risk = α,infinite relative risk means hypothetical risk factors are very strong risk factors for cervical cancer in this population.

3.21. If no awareness about multiple partner is a risk factor for cervical cancer,Attributable risk = 0.1397,Relative risk = α,infinite relative risk means hypopothetical risk factor is very strong risk factor for cervical cancer in this population.



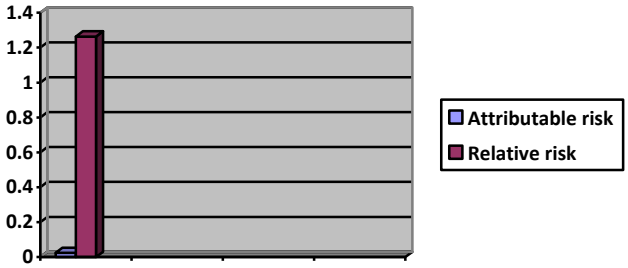
3.22. If no access to nearest PHC is a risk factor for cervical cancer,Attributable risk = 0.1092,Relative risk = α,infinite relative risk means hypothetical risk factor is very strong risk factor for cervical cancer in this population.

3.23. If no maintainance of personal hygiene is a risk factor for cervical cancer,Attributable Risk = 0.1973,Relative Risk = 3.2319

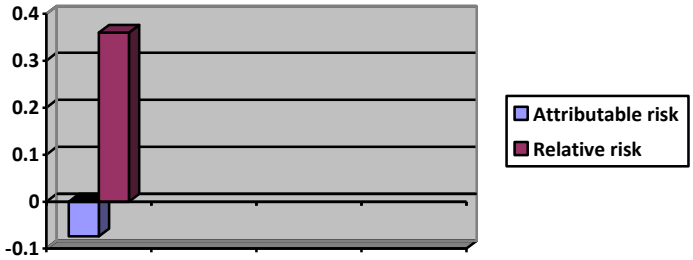


3.24. If no awareness about warning signals is a risk factor for cervical cancer,Attributable risk = 0.1,Relative Risk = α,infinite relative risk means hypothetical risk factor is very strong risk factor for cervical cancer in this population.

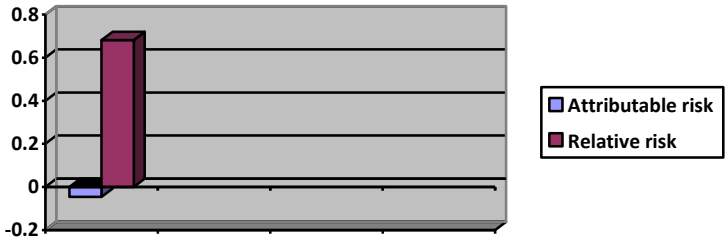
3.25. If residence in village is a risk factor for cervical cancer,Attributable risk= 0.024,Relative risk = 1.2640



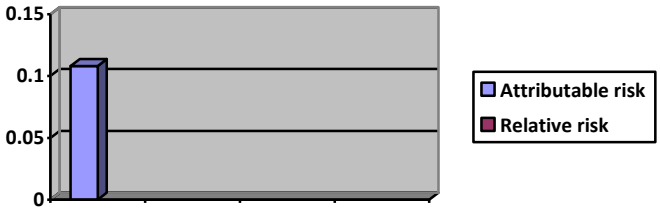
3.26. If specific religion(Muslim & Christian) is a risk factor for cervical cancer,Attributable Risk = - 0.0741,Relative Risk = 0.3595,negative attributable risk means muslim & Christian religion are not a risk factor for cervical cancer in this population.



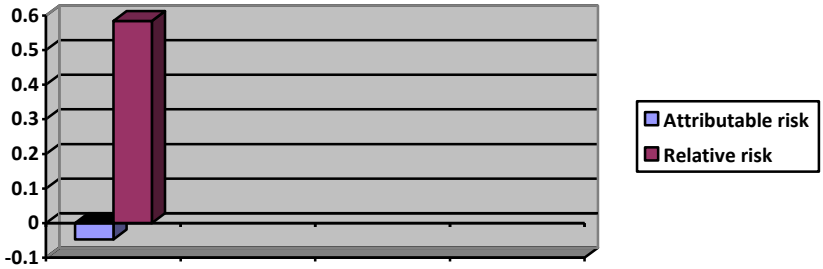
3.27. If Not undergoing regular physical examination is a risk factor for cervical cancer,Attributable risk = -0.0454,relative risk = 0.6813,negative attributable risk means not undergoing regular physical examination is not a risk factor for cervical cancer in this population.



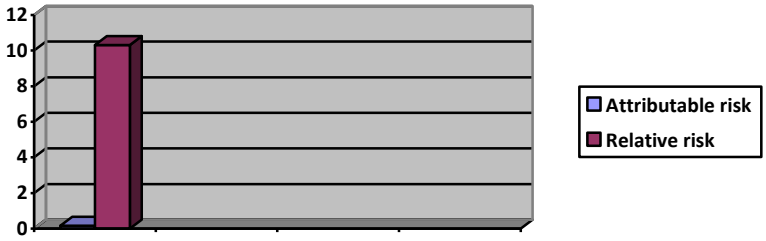
3.28. If specific status of pregnancy(Currently pregnant,previously pregnant) is a risk factor for cervical cancer,Attributable risk = 0.1081, Relative risk = α,infinite relative risk means hypothetical risk factors are very strong risk factors for cervical cancer in this population.



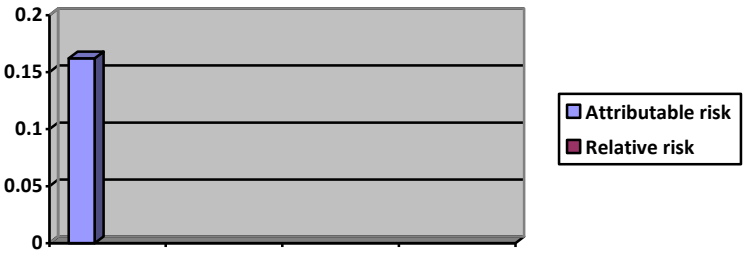
3.29. If specific time of delivery after marriage(2-4 yrs,>4 yrs) is a risk factors for cervical cancer,Attributable Risk = -0.0473,Relative Risk = 0.5847,negative attributable risk means hypothetical risk factors are not actual risk factors for cervical cancer in this population.



3.30. If presence of symptoms is a risk factor for cervical cancer,Attributable Risk = 0.1602,Relative Risk = 10.3139

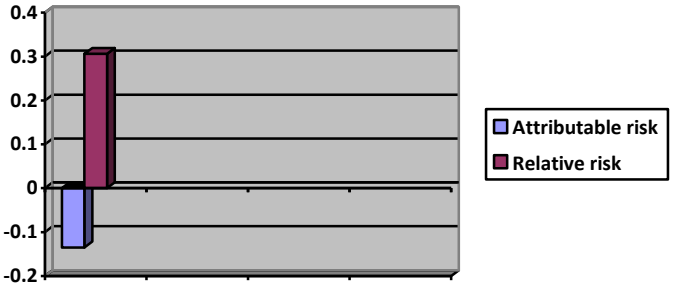


3.31. If specific findings in per speculum examination (Hypertrophied cervix,Cervix is bleeding on touch ,Erosion,Unhealthy cervix,polyp,white discharge) is a risk factor for cervical cancer, Attributable risk = 0.1621,Relative risk = α,infinite relative risk means hypothetical risk factors are very strong risk factors for cervical cancer in this population.



3.32. If specific pap smear results (Dysplasia,Inflammation,Neoplasia) are risk factor for cervical cancer,Attributable Risk = 0.1460, Relative risk = α,infinite relative risk means hypothetical risk factors are very strong risk factors for cervical cancer in this population.

3.33. If not receiving prenatal care is a risk factor for cervical cancer,attributable risk = -0.1349,Relative Risk = 0.3060,negative attributable risk means receiving prenatal care is not an risk factor for cervical cancer in this population.



IV. Conclusion

We have done computerised software based chi-square test(SPSS) to find out the significant factors for cervical cancer in south-eastern part of West Bengal.
Cervical cancer is present at a significant level .

Significant factors contributing in cervical cancer are following:

1) Age>39 years
2) Marital status-married,widow
3) Monthly income(in indian rupees)-(1001-2000)
4) Family history of cancer
5) Source of information about cervical cancer-relative
6) Presence of smoking habit
7) Educational Qualification- studied upto 1-4
8) Status of pregnancy-never been pregnant at all
9) Time of delivery after marriage->4 years

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