Effect of Various Variables of Demographic and Life Style on Menopausal Women by Neural Network

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Abstract: *Epidemiological factor play an important role in identifying the factors responsible for menopausal cancer. Demographic and life style tools are helpful in reducing cancer burden. Present study if focused on impact of demographic and life style on incidence of breast, cervical and uterine cancer with focus on menopausal women ageing 21-70 and above.* **Methods:** *It is an epidemiological study in Ajmer municipal area with retrospective recorded data on breast, cervical and uterine cancer. Participants of current study were registered and diagnosed with breast, cervical and uterine cancer in different hospital of Ajmer municipal area between January 2010-Dec. 2014. Women aged 21-70 and above with invasive cervical, uterine and breast cancer diagnosed in different major hospitals of Ajmer municipal area. Impact of demographic and life style on menopausal factor was analyzed by neural network technique.* **Results:** *There is evidence that demographic and life style factors were associated with menopausal cancer. The significance value revealed that the role of cause of menopause, age of last period, physical activity/day, family member suffering from cancer, type of cancer family member suffering with, hormone therapy for menopause, BMI and other variables were significant at confidence interval of 0.05 level.* **Conclusions:** *To significantly reduce the breast, uterine and cervical cancer mortality and different life style factor should be sturdily intensified to improve long term effectiveness. Quality assessment of life style should be done via early indicators. New cancer life style guidelines should be introduce in Ajmer municipal area and some of them should be gradually incorporated into society practice.*

Keywords: Cancer risk, menopausal women, Life style, Neural network.

1. Introduction

Years of epidemiological and clinical research in cancer has intended for important risk factors for the disease and provided insight into the multifarious etiology. On the other hand, cancer is still a very common and often persistent disease with considerable societal disbursement and personal cost, of both an economical and social nature. It has been established that both viral and non-viral factors play important role in the etiology of carcinogenesis. Epidemiological studies show that the people who develop cancer are more or less likely to be exposed to certain substances than those who do not suffer from cancer.

Women go through symptoms, such as irritability and headaches. Regardless of ethnic origin and skin color, women around the world suffer from indisposition characteristics of menopausal period. During the menopausal period women often gets depressive disorder which is associated with physical health and psychological factor (Clemons 2002). Depressive factor during menopausal period is affected by life style factor such as lower education, lower income source, family back-ground and work place environment. To un-entanglement these complex relationships of menopause, well designed epidemiological studies are needed. Result of these studies will be helpful in better treatment and prevention of women cancer.

2. Literature Survey

It becomes important to stud y the epidemiology of women cancers of varied types, their respective supervision, diagnosis and their treatment schedules. The epidemiology of cancer is the study of the factors affecting cancer, as a way to assume possible trends and causes (Ray M. Merrill 2010). Cancer surveillance provides a quantitative description of cancer and its determinants in a defined population. The core functions of cancer surveillance are the measurement of cancer incidence, morbidity, survival, and mortality for persons with cancer. It also includes the assessment of hereditary tendency, environmental and behavioral risk factors, screening practices and the quality of care from prevention. Cancer surveillance guide us to put the effort to reduce the cancer load and also generates the observations that form the basis for cancer research, prevention and control (Adamo et al., 2010). Cancer surveillance provides registered cases of cancer, estimated new cancer cases, symptoms associated to cancer, mortality due to cancer and trends in the recorded number of cancer deaths. Such epidemiological studies can be helpful in understanding potential risk factors of cancer and discover our options for modulating these risk factors.

3. Material and Methods

Main objective of present study was to evaluate the magnitude of menopausal cancer in the Ajmer municipal area and to provide a framework for assessing the impact of cancer on the community. The birth and death department of Ajmer Municipal Corporation and wards were also important sources of information. Questionnaire was filled by direct interview with patient/relative at time of survey. The inclusion criterion for registration of cases was that the women patients must be residents of the defined areas of Ajmer municipality for a minimum period of one year at the time of first diagnosis of cancer. The following

information was extracted out from the cancer patients in registry record of hospitals.

4. Analysis and Results

To estimate the association between demographic, life style and breast, cervical and uterine cancer, Naural Network Technique was used. The significance value revealed that the role of cause of menopause, age of last period, physical activity/day, family member suffering from cancer, type of cancer family member suffering with, hormone therapy for menopause, BMI, sexually transmitted infection, age at last child was born, family member survival, frequency of exercise, no. of children, age at menarche, practice safe sex, personal hygiene, medication and supplements, therapy for menopause, operations and removal of organs, current stress, how many time meat consumed, type of diet, how often eat fried food, deep fried food, how many times whole grain products consumed/week, how much soft drink consumed /day, how much time tobacco consumed per day, how much tea and coffee consumed /day, green vegetable consumed each day, how much hard drink/day and how much of fat of meat eat are significantly associated with menopausal women cancer at 0.05 significance level. Therefore, null hypotheses related to significant variables have been rejected.
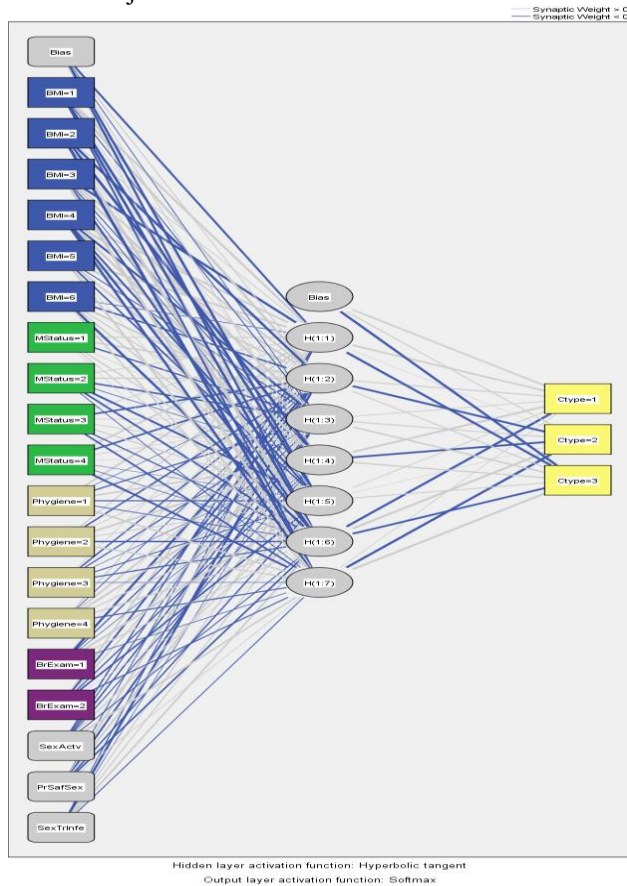

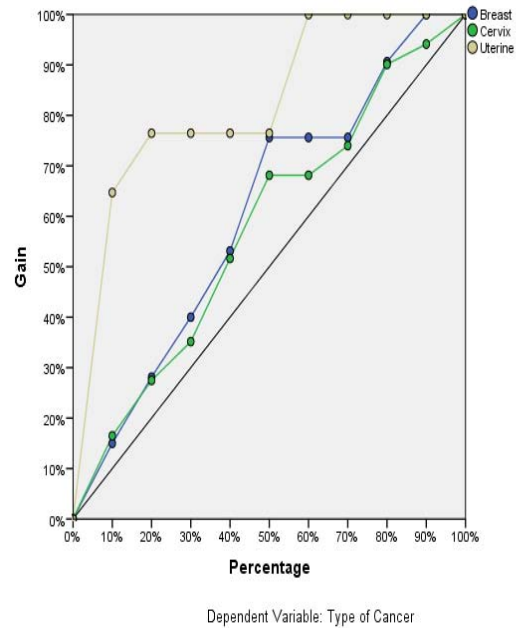**Figure 1:** Showing Neural Network of Life Style Factors with Risk of Cancer

Figure 2: Showing Factor Gaining graph of Life Style Factors with Risk of Cancer

Using established benchmark data sets, it was demonstrate that the learned feature representations are competitive with state of the art graph kernels and that their computation is highly efficient.

Table 1: Showing predicted probability of Life Style Factors with Risk Of Cancer

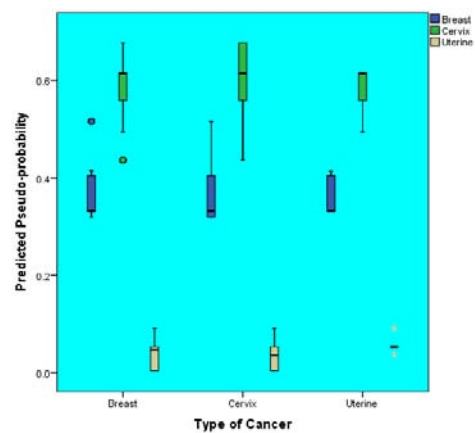| Classification				
Sample	Observed	Predicted		
		Breast	Cervix	Uterine	Percent Correct
Training	Breast	101	3	8	90.2%
	Cervix	5	171	1	96.6%
	Uterine	4	0	8	66.7%
	Overall Percent	36.5%	57.8%	5.6%	93.0%
Testing	Breast	41	4	3	85.4%
	Cervix	3	93	0	96.9%
	Uterine	0	0	5	100.0%
	Overall Percent	29.5%	65.1%	5.4%	93.3%
Dependent Variable: Type of Cancer				

Figure 3: Showing predicted pseudo- probability of Life Style Factors with Risk of Cancer

Table 2: Showing predicted probability of Life Style Factors with Risk Of Cancer

Classification					
Sample	Observed	Predicted			
		Breast	Cervix	Uterine	Percent Correct
Training	Breast	106	5	0	95.5%
	Cervix	5	197	0	97.5%
	Uterine	12	0	0	0.0%
	Overall Percent	37.8%	62.2%	0.0%	93.2%
Testing	Breast	47	2	0	95.9%
	Cervix	4	67	0	94.4%
	Uterine	5	0	0	0.0%
	Overall Percent	44.8%	55.2%	0.0%	91.2%
Dependent Variable: Type of Cancer					

5. Conclusion

A review of policy is now required to address these challenges and prepare women cancer services for a better prospect. However lots of unanswered questions remain, and without randomized trials to test this hypothesis, it is difficult to recommend women to reduce their risk of developing cancer.

6. Future Scope

New research should be elevated to support women cancer policy and women health service development. Find gaps and weaknesses in the current women cancer plan to meet better implementations. Experimentation and evaluation cancer cure policy in community based women cancer services. Developments of baseline knowledge of cancer cure and treatment service are needed.

7. Acknowledgement

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