A Novel Method For Study and Analysis of Risk Factors Causing Cancer

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***Abstract*— According to World health Organization, Cancer is a leading cause of death group worldwide and accounted for 7.4 million deaths in 2004. They projected the fact the maximum deaths are due to risk factors of tobacco use, Alcohol use, Dietary factors including insufficient fruit and vegetable intake, overweight and obesity, physical inactivity, chronic infections, environmental and occupational risks including ionizing and non-ionising radiation. In this paper, Cancer causing risk factors and its details are taken for detailed study and analyze them to develop a Dempster-Shafter theory (DST) method to estimate its effect. Risk factor is one of cause for cancer, the impact of a particular factor may not be alone considered. Now days cancer is becoming a common disease and people are not aware of the real impact of risk factors because they are more concern about their life settlement. The objective of brining this paper is a formal approach to bring into light those risk factors that cause cancer, thereby motivating people, research wings, and medical groups to put an alarm so that the prevention, diagnosis, timely treatment may takes place so that life span of a cancer patient may increase. Cancer and its Risk factors, Protective factors are described. Uncertainty Reasoning and application of DST is used as a theoretical basis for analysis of Risk factors for cancer disease. DST is an important tool in uncertainty modeling. The results obtained are to attach some measure of belief to elements selected risk factors that cause cancer as frame of discrement. DST handles interactions by manipulating sets of hypotheses directly. Finally how to fight against cancer in different stages i.e identification, diagnosis and Treatment are discussed.**

Keywords*— *Risk-factors, Protective factors, Dempster- Shafer theory, frame of decrement, belief, disbelief and mass function, evidence interval.

I. INTRODUCTION

There are several risk factors that might cause cancer disease. Some of them are aging, use of Tobacco, environmental radiation, exposure to chemicals, some bacteria and viruses, certain hormones come as hereditary from elders who suffered with cancer, diet without nutrients or proteins etc, lack of some physical exercise or being overweight, alcohol.

DST approach, introduced in 1960 by Arthur Dempster [1] and developed in the 1970's by Glenn Shafer [2]. It considers set of propositions and assigns each of them an interval [Belief, Plausibility]. It provides the extent to which Belief must lie. Belief (Bel) measures the support of the evidence in favor of selected symptoms or factors for a particular disease. It takes values from 0(signifies no support) to 1(denoting certainty). Plausibility (Pl) is defined as:

$$Pl(s)=1-Bel(\sim S).$$

Intelligent Modelling and Analysis Research Group, School of Computer Science, University of Nottingham, Jubilee Campus, Wollaton Road, Nottingham, NG8 1BB, U.K.[3] used DST as data classifier. DST can be described as:

For the subset A, pl(A) and bel(A) represent upper and lower bounds of the probability interval respectively, and the interval [bel(A), pl(A)] represents the probability range or uncertainty. The relationships between bel value, pl value and uncertainty is shown graphically in Figure 1.

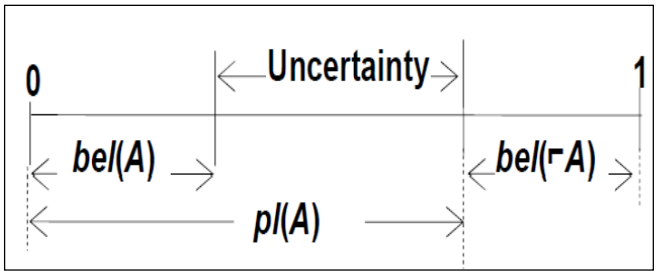

Figure 1: Graph showing Uncertainty Interval

It also takes values from 0 to 1. It measures the extent to which evidence in support of negation of that particular symptom.

Let's use b(x) to represent the strength of belief in (plausibility of) proposition x.

- $0 \leqslant b(x) \leqslant 1$
- b(x) = 0 x is definitely not true
- b(x) = 1 x is definitely true

- b(x|y) strength of belief that x is true given that we know y is true

According to Peter Szolovits "Uncertainty [4] is the central, critical fact about medical reasoning. Patients cannot describe exactly what has happened to them or how they feel, doctors and nurses cannot tell exactly what they observe, laboratories report results only with some degree of error, physiologists do not understand precisely how the human body works, medical researchers cannot precisely characterize how diseases alter the normal functioning of the body, pharmacologists do not fully understand the mechanisms

accounting for the effectiveness of drugs, and no one can precisely determine one's prognosis. For diseases with more than one risk factor, the sum of probabilistic estimates of the number of cases caused by each individual factor may exceed the total number of cases observed, especially when uncertainties about exposure and dose response for some risk factors are high.

The type of uncertainty that can occur in Machine learning or knowledge-based systems:

1. Data might be missing or not fully available.
2. Data might be present because of the factors no reliability or inconsistent or ambiguous.
3. The representation of the data may be lengthy or not clear due to lack of consistency.
4. Data may be available with some user assumptions.
5. Data may be based on some default values or may have some exceptions.

To implement reasoning with uncertainty, it must be concerned with three things, they are:

1. To represent uncertain data.
2. To select or add two or more different parts of data with uncertainty.
3. To draw inference using this uncertain data

II. ABOUT RISK- FACTORS

Doctors often cannot explain why one person suffers with cancer and another does not. But research shows that some risk factors may lead to getting that a person will have a cancer. Several factors may act together to cause normal cells prone to cancerous. Here are some things to keep in mind:

- Not everything causes cancer.
- A burn or injury may not cause a Cancer.
- A person affected with certain virus or bacteria, then it may cause cancer when exposed to risk factors but cancer will not spread from one person to another person.
- Having one or more risk factors does not mean that you will get cancer. Most people who have risk factors never develop cancer.
- Some people are very sensitive to known risk factors when compare with others.

Cancer is not a classified as one particular type of disease; or it may not have a single cause. Many causes or risk factors may contribute that a person can get cancer. The type of cancer defines the risk factors which are different with each type of cancer. Risk factors include such things as age, race, sex, genetic factors, diet and exposure to chemicals, radiation and tobacco.

- Risk factors are things that may or may not initiate the cancer.
- Most cancers are based on more than one risk factor
- Some risk factors are controlled while others cannot.

There following are possibilities for describing a risk:

The risks are significant:

1. That they can be effectively controlled
2. It cannot be adequately controlled
3. There is uncertainty about the risks, there is no sufficient information about the hazards or there is lot of uncertainty about exposure to the risk.

Table1: Examples of Environmental Risk Factors[7] :

Well-Characterized Factors	Less-Well-Characterized Factors
Cigarette smoking Passive smoking Indoor radon exposures Occupational exposure to inhaled asbestos	Occupational exposures Arsenic Beryllium Chromates Chloromethyl ethers Diesel exhaust Nickel Silica Soot Polycyclic aromatic hydrocarbons (PAHs) Ambient air pollution

Health monitoring is required, when there is uncertainty about the risks. Preventive measures are required; when there is potential risk exposure is high.

Carcinogens are the substances that are primarily responsible for damaging DNA, promoting the disease cancer. These substances are Tobacco, asbestos, arsenic, radiation, and compounds in car exhaust fumes. When human body is exposed to carcinogens, free radicals are formed that steal electrons from other molecules in the body. Theses free radicals damage cells and affect their normal function normal.

a) Tobacco

Tobacco direct or indirect use is the most important and preventable cause of death. Each year, more deaths in worldwide are due to cancer that is related to tobacco use.

b) Certain chemicals

People who are in the field of painting, construction w, and chemical industry have a higher risk of cancer. Many studies have shown that exposure to asbestos, benzene, benzidine, cadmium, nickel, or vinyl chloride in the workplace is a serious concern that causes cancer.

A chemical is determined to be a harmful depending on the following factors:

1. Toxicity: Amount of the substance is required to cause harm,
2. Route of exposure: how the substance effects human body,
3. Dose: Percentage of substance that enters human body, duration: the length of the exposed,
4. Multiple exposures: other chemicals that are exposed to, and

5. Individual susceptibility: percentage of human body reacts to the substance, compared to other Normal unaffected person.

Role of chemicals:

Exposure normally occurs through inhalation, skin or eye contact, and ingestion.

A very important type of chemical industry, exposure occurs when a person breathes a substance into the lungs. The lungs consist of branching airways with clusters of tiny air sacs at the ends of the airways. The alveoli absorb oxygen and other chemicals into the bloodstream.

Some chemicals cause eye, nose, and throat irritation. They may also cause body discomfort, cough, cold, or sometimes chest pain when they are inhaled and come into contact with the bronchi. Other chemicals may be inhaled cannot cause such symptoms, but they are still be dangerous.

Sometimes a chemical is present in the air as small particles. Some of these particles may be deposited in the bronchi. Many of them may be coughed out, but some particles may remain in the lungs and may cause lung damage. Some particles may be absorbed into the bloodstream, and have effects on the body.

The skin acts as a defensive barrier that helps keep foreign chemicals out of the body. However, some chemicals can easily penetrate through the skin and may enter the bloodstream. If the skin is cut or cracked, chemicals can penetrate through the skin more easily. Also, corrosive substances, like strong acids and alkalis, can chemically burn the skin. Others can cause itching on the skin.

Some chemicals may infect the eye. The eyes are easily infected by chemicals because of sensitiveness.

Chemicals can be ingested if they are accidentally left on hands, clothing, or beard, or sometimes they accidentally contaminate food or drinks. Metal dusts, such as lead or cadmium or other metallic substances, are often ingested in this way. Sometimes particles trapped in nasal or lung mucus may be swallowed.

c) Family history:

Cancer will develop because of mutations in genes. A normal cell may become a cancer cell after cell mutations. Some of these mutations in genes increase the risk of cancer that are passed and from parent to child. It is not compulsory for cancer to run in a family. However, certain types of cancer occur more when compared with others in population.

d) Alcohol

Having more than limited drink each day for many years may increase the chance of getting cancers of following type:

Mouth, throat, esophagus, larynx, liver, and breast. The risk is high for a person who uses tobacco also.

III. RISK AND PROTECTIVE FACTORS IN THE DEVLOPEMNT OF CANCER

Table 2: Shows Protective factors Vs Risk factors related to a particular type of cancer.(Adopted from: Westcott .S. A journey to Cancer's causes.)

PROTECTIVE FACTORS H: Lowers risk heavily M: Lowers risk medianly L: Lowers risk lightly				RISK FACTORS H: Raises risk heavily M:Raises risk medianly L: Raise risk lightly			
Type of cancer	Vegetables	Fruits	Physical Activity	Alcohol	Obesity	Tobacco use	Environmental exposure
Lung	H	H	L	L		H	M
Colon/Rectum	H		H	M	L	L	
Breast	M	M	L	M	M		
Prostate	L						L
Stomach	H	H					L
Oral/Pharynx	H	H		L		H	L
Kidney	L				M	L	
Ovary	L	L					
Pancreas	M	M				H	
Liver	L			H			L
Cervix	L	L				H	
Bladder	M	M				H	M
Esophageus	H	H		H		H	L
Larynx	M	M		H		H	L
Thyroid	L	L					M
Uterus	L	L			H		
Gallbladder					L		
Nasopharynx						M	L

IV ABOUT DEMPSTER-SHAFER THEORY

DST is a method used for reasoning with uncertainty based on mathematical theory and used in Artificial Intelligence deals with evidence based on belief - plausible reasoning. It was introduced in the 1960 for reasoning under uncertainty by Arthur Dempster [1] and developed in 1970's by Glenn Shafer who is a student of Demptster.[2] DST consists of different models, like 'Transferable Belief Model', which obtains degrees of belief. Dempster's Rule of Combination (DRC), which is used to combine probabilities when they are depended on independent items of evidence.

DST begins by imagining a frame of discernment (Θ), which is a finite set of mutually exclusive propositions and hypotheses about chosen problem domain. It is the set of states under consideration. When diagnosing a patient, Θ would be the set consisting of all possible symptoms or diseases. The power set 2^{Θ} is the set of all subsets of Θ including the empty set ϕ.

V. RISK FACTOR ANALYSIS USING DST

FIGURE 2: SCENARIOS FOR COMBINING UNCERTAINTY RISK FACTORS:

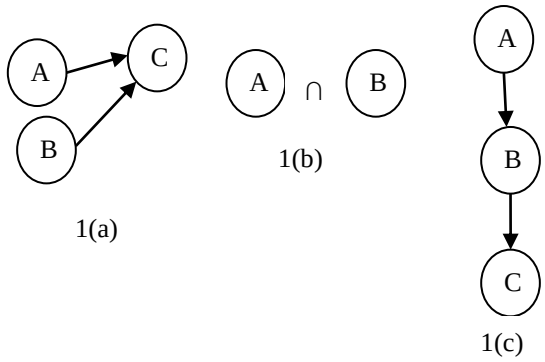

Fig.1(a): Several risk factors provide evidence related to single hypothesis.

Fig. 1(b): To consider belief in collection of several risk factors taken together.

Fig. 1(c): Effect of one risk factor (output) provides input to another risk factor.

The development of this theory has been motivated by the fact that probability theory is unable to distinguish between uncertainty and ignorance owing to incomplete information.

Given a set of possible elements, called environment, let $\Theta = \{\theta_1, \theta_2 \ldots \theta_n\}$ are mutually exclusive and exhaustive.

For example:

Θ = {yellow, red, green, blue, orange}

In the term frame of discernment, term *discern* means that it is possible to select the one correct answer from all the other possible answers to a question when all answers seem to be correct.

Mass Functions and Ignorance:

The belief in evidence may vary in DST whereas in Bayesian theory, the prior probability changes as evidence is acquired. It is compulsory in Dempster-Shafer theory to think about the *degree of belief in evidence* as similar to the mass of a physical object, because the object of mass is to consider belief as a quantity that can be used at user choice.

The Dempster-Shafer theory [6] the mass is assigned only to the subsets of the environment in which assigned a belief.

- Any belief that is not assigned to any one of specific subset is taken no belief and it is associated with environment Θ.
- Belief that refutes a hypothesis is knows as disbelief.

Table3: shows the differences between Probability theory and Mass function of DST

Probability theory	Mass function of Dempster-Shafer theory
$\sum P_i = 1$	$m(\Theta)$ does not have to be 1
$P(X) \le P(Y)$	If $X \subseteq Y$, $m(X) \le m(Y)$ is optional
$P(X) + P(X') = 1$	No relationship between mass functions of X and X'

A DST mass function has considerably more freedom than probabilities

A mass assignment function m(x) is a number m(x) : $x \subseteq \Theta$ such that:

$$1 \ge m(x) \ge 0,\ m(\varnothing) = 0,\ \sum m(x) = 1$$

Let Θ be a frame of discernment and m be a mass assignment function on Θ. A set $x \subseteq \Theta$ is called a *focal element* in m. If m(x) > 0 then *core* of m is set of all focal elements in m.

Let us consider cancer Risk factors Θ ={Tobacco, Alcohol, Chemicals, Family history} or simply

Θ = {T, A, C, F}

For every mass assignment on Θ, assigns mass numbers to all elements of subsets. For example four elements the power set 2^4=16. If there is no evidence pointing at a particular cause for risk factor, the mass of 1 is assigned. It is given by:

$$m_0(x) = 1 \text{ if } x = \Theta$$
$$= 0 \text{ otherwise} \quad \rightarrow (1)$$

If there is some evidence recorded in favour of certain risk factors, then the mass function m_1 is:

$$m_1(x) = 0.6 \ if\ x = \Theta$$
$$= 0.4 \ if\ x = \{A, C\}$$
$$= 0 \ otherwise \quad \rightarrow (2)$$

Similarly consider some other evidence; the mass function m_2 is as follows:

$$m_2(x) = 0.3 \ if\ x = \Theta$$
$$= 0.7 \ if\ x = \{A\}$$
$$= 0 \ otherwise \quad \rightarrow (3)$$

Now Combining the Evidence, Dempster-Shafer theory provides a function for computing from two types of evidences and their corresponding masses describing the combined influence [5] of evidence. This function is known as *Dempster's rule of combination*. It is given as follows:

Let m_1 and m_2 be mass assignments on Θ, the frame of discernment. The combined mass is computed using the formula.

$$m_1 \oplus m_2(Z) = \sum m_1(X) m_2(Y)\ X \cap Y = Z \rightarrow (4)$$

Table4: Calculation of combining Evidence m_3 :

	$m_2(\{A\}) = 0.7$	$m_2(\Theta) = 0.3$
$m_1(\{A,C\}) = 0.4$	{A} 0.28	{A,C} 0.12
$m_1(\Theta) = 0.6$	{A} 0.42	Θ 0.18

$$m_3(\{A\}) = m_1 \oplus m_2(\{A\}) = 0.28 + 0.42 = 0.7$$
$$m_3(\{A, C\}) = m_1 \oplus m_2(\{A,C\}) = 0.12$$
$$m_3(\{\Theta\}) = m_1 \oplus m_2(\{\Theta\}) = 0.18$$

The $m_3(\{A\})$ represents the belief that the target is an Alcoholic. $m_3(\{A, C\})$ imply alcoholic or exposure to chemicals and $m_3(\{\Theta\})$ imply non belief, i.e. neither in

favour two factors. It is plausible that their sum may contribute to a belief in favor of Alcoholic.

So, 0.12 +0.18 =0.3 may be added to the belief of 0.7, to yield a maximum belief (=1) that could be an alcoholic. This is called plausible belief. The two belief values for a person be alcoholic, 0.7 and 1. This pair represents a range of belief. It is called an evidence interval. The lower bound is known as the support or Bel and the upper bound is known as plausibility.(Pls)[4]. The support is the minimum belief based on the evidence, while the plausibility is the maximum belief willing to have. Thus $0 \leq Bel \leq Pls \leq 1$.

Table 5: Evidence Interval and its Meaning

Evidential Interval	Meaning
[1, 1]	Completely true
[0, 0]	Completely false
[0, 1]	Completely ignorant
[Bel, Pls] where 0 < Bel ≤Pls < 1 here	Tends to both support and refute
[0, Pls] where 0 < Pls < 1 here	Tends to refute

The Belief function or support) is defined to be the total belief of a set and all its subsets.

$$Bel(X) = \sum m(Y) \quad Y \subseteq X \qquad \rightarrow (5)$$

$Bel_1(\{A,C\}) = m_1(\{A,C\}) + m_1(\{A\}) + m_1(\{C\})$
$= 0.4+0+0 = 0.4$

Belief function is different from the mass, which is the belief in the evidence assigned to a *single* set. Since belief functions are defined in terms of masses, the combination of two belief functions also can be expressed in terms of masses of a set and all its subsets.

$Bel_1 \oplus Bel_2(\{A\}) = m_1 \oplus m_2(\{A\}) + m_1 \oplus m_2(\{\phi\})$
$= 0.7+0 = 0.7$

$Bel_1 \oplus Bel_2(\{A,C\}) = m_1 \oplus m_2(\{A,C\}) + m_1 \oplus m_2(\{A\}) + m_1 \oplus m_2(\{C\})$
$= 0.12 + 0.7 + 0 = 0.82$

$Bel_1 \oplus Bel_2(\{\Theta\}) = m_1 \oplus m_2(\{\Theta\}) + m_1 \oplus m_2(\{A,C\}) + m_1 \oplus m_2(\{A\})$
$= 0.18+0.12+0.7 = 1$

$Bel(\Theta) = 1$ in all cases since the sum of masses must always equal 1.

The evidential interval of a set S, EI(S), may be defined in terms of the belief.

$$EI(S) = [Bel(S), 1 - Bel(S')] \qquad \rightarrow (6)$$

Let S = {A} and S' = {C, F} and
$Bel(\{C,F\}) = m_1 \oplus m_2(\{C,F\}) + m_1 \oplus m_2(\{C\}) + m_1 \oplus m_2(\{F\}) = 0+0+0 = 0$
mass is 0 for non focal elements.

Thus $EI(\{A\}) = [0.7, 1-0] = [0.7, 1]$
since $Bel(\{F\}) = 0$ and

$Bel(\{A,C\}) = Bel_1 \oplus Bel_2(\{A,C\}) = 0.82$
Then $EI(\{A,C\}) = [0.82, 1-0] = [0.82, 1]$
$EI(\{T\}) = [0, 0.18]$

The plausibility is defined as the degree to which the evidence fails to refute X

$$Pls(X) = 1 - Bel(X')$$
$$Thus, EI(X) = [Bel(X), Pls(X)] \qquad \rightarrow (7)$$

The evidential interval [total belief, plausibility] can be expressed as:
[Evidence for support, evidence for support+ ignorance]

The dubiety (Dbt) or doubt represents the degree to which X is disbelieved or refuted.

The ignorance (Igr) is the degree to which the mass supports X and X'.
These are defined as follows:

$$Dbt(X) = Bel(X') = 1 - Pls(X)$$
$$Igr(X) = Pls(X) - Bel(X) \qquad \rightarrow (8)$$

The Normalization of Belief:

Let an evidence that conflicting evidence in favor of use of Tobacco

$m_3(\{T\}) = 0.95 \quad m_3(\Theta) = 0.05$
$$Bel(X) = \sum m(Y) \qquad \rightarrow (5)$$

Table6: combining mass function m_3 with combined mass function $m_1 \oplus m_2$

	$m_1 \oplus m_2(\{A\})$ 0.7	$m_1 \oplus m_2(\{A,C\})$ 0.12	$m_1 \oplus m_2(\{\Theta\})$ 0.18
$m_3(\{T\}) = 0.95$	ϕ 0.665	ϕ 0.114	{T} 0.171
$m_3(\Theta) = 0.05$	{A} 0.035	{A,C} 0.006	Θ 0.009

$m_1 \oplus m_2 \oplus m_3(\{T\}) = 0.171$
$m_1 \oplus m_2 \oplus m_3(\{A\}) = 0.035$
$m_1 \oplus m_2 \oplus m_3(\{A, C\}) = 0.006$
$m_1 \oplus m_2 \oplus m_3(\Theta) = 0.009$
$m_1 \oplus m_2 \oplus m_3(\phi) = 0$

Note that here the sum of all masses is less than 1
$m_1 \oplus m_2 \oplus m_3(X) = 0.171+0.035+0.006+0.009 = 0.221$

The sum of all focal elements must be 1. This is a problem. The solution to this problem is a normalization of the focal elements by dividing each focal element by 1-k where k is defined by any sets X and Y as:

$$k = \sum m_1(X) m_2(Y) \quad X \cap Y = \varnothing \qquad \rightarrow (9)$$

k = 0.665+0.114 = 0.779 and 1-k = 0.221

Dividing each $m_1 \oplus m_2 \oplus m_3$ focal element by 1-k,

$$m_3(Z) = \frac{\sum_{X\cap Y=Z} m_1(X).\ m_2(Y)}{1-\sum_{X\cap Y=\emptyset} m_1(X).\ m_2(Y)} \quad \rightarrow(10)$$

Note that κ = 1 is undefined.

The Normalized values are:

$m_1 \oplus m_2 \oplus m_3(\Theta)$ = 0.009/0.221 = 0.041

$m_1 \oplus m_2 \oplus m_3(\{A, C\})$ = 0.006/0.221 = 0.02715

$m_1 \oplus m_2 \oplus m_3(\{T\})$ = 0.171/0.221 = 0.7738

$m_1 \oplus m_2 \oplus m_3(\{A\})$ = 0.035/0.221 = 0.1584

The belief in {A} is reduced by the evidence of T .f in {A} . The total normalized belief in {A} is now:

$Bel(\{A\}) = m_1 \oplus m_2 \oplus m_3(\{A\}) = 0.1584$

$Bel(\{A\}') = Bel(\{T,C\}) = m_1 \oplus m_2 \oplus m_3(\{T,C\}) + m_1 \oplus m_2 \oplus m_3(\{T\}) + m_1 \oplus m_2 \oplus m_3(\{C\})$

$= 0+0.7778+0 = 0.7738$

The evidence interval is now:

$EI(\{A\}) = [\ Bel(\{A\}, 1- Bel(\{A\}')]$

$=[0.1584, 1-0.7738]$

$=[0.1584, 0.2262]$

Similarly the EI of all other factors may be analyzed.

VI. STRATEGIES TO FIGHT AGAINST RISK FACTORS CANCER

More than 35% of cancers are due to the risk factors. Tobacco use is the single preventable cause for most of the cancers and is responsible for deaths up to 1 million per year

Strategies:

- Control of direct or indirect use of Tobacco
- Regular healthy diet and physical activity
- Preventing excess use of alcohol
  Be cautious against infectious agents associated with cancer
- Reduce exposure and develop protective actions to carcinogens in the environment include ionising and non-lionizing radiation.

Cancer can be reduced if cases were detected and treated early. Early diagnosis is the awareness of early signs and symptoms in order to facilitate diagnosis and treatment before the disease enters a critical stage. Screening aims to identify individuals with an abnormality suggestive of a specific cancer or pre-cancer and refer them promptly for diagnosis and treatment [8]. Out of all creating awareness among existing cancer patients and different remedies to reduce the life risk or to extend their life period.

Treatment is the series of interventions or solutions to solve different issues. In addition, psychosocial support, surgery, and radiotherapy, chemotherapy, for curing the disease or prolonging the life considerably pays an important role in improving the patient's quality of life.

Effective public health protocols and strategies, comprising community, home-based prevention and care approaches are essential to provide pain relief. Relief is most important for advanced cancer patients through physical like yoga, psychological like counselling and spiritual like motivating speeches, etc methods.

VII. CONCLUSIONS`

In this paper, the cancer causing risk factors are described fully and protective factors are also listed. Then reasoning with uncertainty DST (Dempster-Shafer theory) is applied for the risk factors. DST evidence is one of the important tools for decision making under uncertainty. DST is more fruitful in situation when cost of technical difficulties involved or uniqueness of the situation under study makes it difficult to make enough observations to quantify the models. Finally some factors to deal with cancer are discussed.

ACKNOWLEDGMENT

The work done in this research paper is a primary step in analysis of Cancer disease based on risk factors. DST is method used in Uncertainty conditions. The risk factors are the uncertainty conditions that may or may not cause any cancer. However the effect of Risk factor is compulsory to measure to control or monitor the disease and thereby reducing the new cases of cancer or early detection and diagnosis followed by a correct treatment. Many cancer research, diagnosis and treatment centres are giving weight for studies from the scratch. This paper gives awareness and new methods for control risk factors causing cancer.

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