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Research Paper Environmental Science

The Impact of Development on Environment

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ABSTRACT *Sustainable development is described as a perception of requirements as well as the limitations inflicted by the society and technology on the ecosystem's ability to encounter the current and future needs. Sustainable development endorses the idea that development or environment should not be forfeited for the other, rather each development must coincide with environmental cognizance. This paper offers a theoretical analysis of development and its impact on environment.*

KEYWORDS : ***Sustainable development, ecosystem, environment protection***

Introduction

Today modern development is the motto of ruling parties. Nehru government focused on sovereign national state with the spirit of modern progress. Then onwards the nation emphasized the requirement of economic development based on large-scale heavy industry, big dams and nuclear reactions and so on. Thus the nationalism wedded with modern development ideologies. Consumer capitalism is one of the ideologies among the modern development .it tries to shape life styles for the sake of its accumulation process and ecologically unsustainable.

The widely pointed out cause of poverty is backwardness. People are poor because our country is far behind the west .the remedy for this situation is adopting modern techniques of development .they are modernize education, modernize industry and agriculture. In this sense the development is conceived as 'catching up with the west'. The idea is due to this process more wealth will be produced and slowly the process will percolate down to the economically lower section of the society. The history says this created increased productivity and social status of the rich to the exclusion of the poor.

Development should give capability, choices and freedom to earn for an improved life. Thus it visualizes the development should be socially equitable, ecologically sustainable, politically participative and culturally acceptable and economically viable and environmentally compatible. But consumer capitalism wants things to be replaced as quickly as possible. People are discovering their freedom not to buy, respectively are creating infrastructures to buy differently.

All the development activities should be undertaken only after a careful evaluation of its impact, cost and benefits. Majority of the developments are beneficial to the upper class only. Such development projects ideas are generated from the business meets. The governments nod its head to these projects of development which are not at all socially equitable. They should attempt to find and implement environmentally compatible, socially acceptable and environmentally viable means to acquire the development. It must flow from an integrated frame work .all the stake holders must work together in translating the policy, legislation and programme so as to restore the disturbed equilibrium and reduce disastrous consequences. The outcome of these projects will be more comprehensive and effective when all the sustainability elements are addressed together.

The unbridled development involves irreversible transformation of the eco system. Unlike other environmental concerns, global warming is considered to be most daunting issue that threatens developing as well as the developed countries. Global warming is one of the consequences of the modern technology and development .there are several factors that trigger global warming. The destruction of tropical forests, deforestation, overpopulation, traffic congestion in city streets, increasing use of CFCs in industries while packing and manufacturing products, rapid development of industries and use of detergents are some of the triggering factors of global warming. Progressive increase in the development of mills and factories create a negative impact on the earth's atmosphere by increasing the amount of CO2.the principal reason of global warming is the green house gases. Extreme amount of green house gases by developed countries is considered as a serious concern.

This result in substantial destruction of the agriculture, forestry and fisheries while catastrophically destroying the wild life and decreasing human's ability to grow foods and also result in seawater to swell up. Since every species in the earth is imperative to maintain its ecological balance, extinction of any species, result in changes in the natural environment. These alarming effects pinpoint in to the necessity of preventing global warming.

The alarming world's climate is very dangerous for mankind and ecological balance. Unless Global Warming is not controlled, no men, animals will be able to live, grow and thrive. So, we should try to maintain the ecological balance to decrease the effects of Global Warming.

Sustainable Development

Sustainable development is described as a perception of requirements as well as the limitations inflicted by the society and technology on the ecosystem's ability to encounter the current and future needs. World Commission on Environment and Development (WCED) defined sustainable development as a transformation process where direction of investments, utilization of resources, coordination of industrial and technological developments and institutional change are all in harmony while augmenting the present and future capability to encounter the social needs and aspirations.

It has been since decades of years, the different cultures over the course of human history realized the necessity for harmony between ecosystem, economy and society. Sustainable development endorses the idea that development or environment should not be forfeited for the other, rather each development must coincide with environmental cognizance. More over it is a development that encounters the needs of the present generation without compromising the ability of future generations to meet their own needs. The idea of sustainable development was highly appreciated at the United Nations Conference on Environment and Development (UNCED) at a Rio de Janero in Brazil, generally known as Earths Summit. Sustainable development is affected by the dynamics of growth of population. Failure of family planning has been viewed as a major reason for India's backwardness. Implementation of a realistic, welfare oriented human approach to family planning is necessary in order to accomplish the goals of sustainable development. Taking this in to consideration, the developed countries have uneven impact on the global environment compared to developing countries.

Conclusion

Poverty is not the real problem. The real problem is inequality and therefore the division between rich and poor. A few, because of wealth and education have power over those who have no access to either.

Neo- liberal ideology tries to deny that something like society exists. In its view there is only life with all its possibilities and individuals who have to see it that they make it in life. People's control, management of resources and people's participation in decision making are as the key to be transformation of society.

It would be more worthwhile if the government policies are simplified for flourishing eco friendly and sustainable businesses and introduce innovative ways that reduce environmental impact and protecting sensitive habitat that may be irrevocably damaged by these projects. Modernization is important only when a fair distribution of wealth and resources has taken place.

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Research Paper Medical Science

Clinical Profile of Subendocardial (Non Transmural) Infarction (NQMI)

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KEYWORDS :

Ischemic heart disease is the number one cause of death and subendocardial is the weakest link in the chain of survival. Thirty cases of non Q wave myocardial infarction (NQMI) profile. Following were cardinal observations of our study.

- Most of patients were in age between 50-60 years and twice common in male and incidence were 6% of all AMI cases.
- Onset was acute in 53% and subacute in 47% with H/o CAD, HBP and DM in 40%,13% and 20% respectively.
- Typical chest pain (70%) breathlessness (14%) and palpitations (7%) were presenting manifestations.
- Location of infarct was anterior (57%) inferior (20%) and combined (23%) among which 12 had ST segment elevation and 18 had ST depression.
- Three patient progress to QMI and NQMI was of type II in 87%.
- CPK MB was elevated 2-5 times in 60%.
- Heart failure (30%), arrhythmias (20%), development of QMI (10%). PMD (6.6%) and mortality was 10%. The combined infarct had poor prognosis.

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Research Paper | Medical Science

The Relevance and Importance of Kriyakaal Principal of Ayurveda in Present Time

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ABSTRACT

In today's world human life is surrounded and affected by many diseases. People suffer through many types of disease at different stages of life. The symptoms which initially look normal may switch into different chronic disease which can affect one's mental, physical and financial status too.

In modern medical treatment when prices go up it becomes really difficult for a common man to cope up and afford the expenditure required in the investigation and treatment.

When this case comes in Ayurveda Science it can be solved through kriyakaal principal. If a person in general, studies about this principal he may get to know about the initial symptoms of some very dangerous disease from the first stage only. These six stages help in the through recognition of the seed of the disease much before it shows it's clinical indications. The Ayurvedic Acharyas have mentioned about the symptoms so that a person accordingly starts maintaining his diet and lifestyle and start taking appropriate precautions. This enables an individual to maintain his personal wellbeing and health.

A sincere effort has been made here to solve this situation from Ayurveda Science and its relevance in the present day.

KEYWORDS : kriyakaal process, Adhyashan, katu rasa, prakopavastha, life style

Introduction:

From starting till the end Acharya Sushrut has mentioned about six different stages in a disease in the form of six different Kriyakaal Process. Achary Charak and Vagbhat have also mentioned some of these stages in their texts. In the process of kriyakaal various stages of disease are also described.

Keeping this in mind we have tried to make efforts to solve this problem and we have come up with some solutions. We have go through many ancient ayurveda texts and came up with following solutions in the form of kriyakaal process. Following comes the process of Kriyakaal.

1. *SANCHAYAVASTHA* - First stage of treatment
2. *PRAKOPAVASTHA* - Second stage of treatment
3. *PRASARAVASTHA* - Third stage of treatment
4. *STHANSANSRAYAVASTHA*- Fourth stage of treatment
5. *VYAKTAVASTHA* - Fifth stage of treatment
6. *BHEDAVASTHA* - Sixth stage of treatment

1. *SANCHAYAVASTHA*- **First stage of treatment**

When Doshas are accumulated in our body, an individual wants the opposite diet and life style i.e. in *Atyashana* (intake of excess food) or *Adhyashana* (intake of food over preconsumed food) an individual wants *Langhana* (fasting) and if one takes sweet food in more quantity then after that he wants only salty or spicy diet. *(Astang Hridaya, Sootra Sthaana Chapter X1I, verse 22).* Besides this some symptoms are produced in our body i.e. because of Vata Dosha sanchya- stiffness in body, because of Pitta Dosha sanchya- yellowishness in nail, skin and eyes etc., because of Kafa Dosha sanchya - one feels lethargic. Sanchayavastha is the first stage of treatment where Doshas can be normal and can not enter in next stage.

2. PRAKOPAVASTHA- Second stage of treatment

When in the first stage of kriyakaal principal treatment is unavailable due to some reasons doshas get displaced from their original location. According to Acharya Sushrut the main reasons for the conversion of sanchayavastha to prakopavastha are insufficient diet and seasonal changes. *(Sushrut Sutra Sthan, Chapter XXI, verse-18)*

Some of them are listed below:

Causes of Vata Dosha Prakopaka -

Causes related to Diet-

Below mentioned food contents are some of the diet related reasons for this conversion- *tikt, kashya, katu rasa yukt food,* dried food, light food, cold items, fasting, eating food when the previously consumed food is undigested, overeating, insufficient intake of food and consumption of food on unscheduled time. These all are diet related reasons.

Causes related to Life Style -

Sneezing, belching, over exercise, more of walking, being hurt, not taking good sleep, doing work more than ones ability, urine, stool, vomiting and more study these reasons related to life style changes.

Causes due to Seasonal Changes -

Rainy season, early morning, winter season, *apranh kaal*, cloudy weather, stormy or windy weather, after digestion is completed, all such changes leads to the rise in Vata Dosha.

Causes of Pitta Dosha Prakopaka:

Causes Related to Diet -

Food enriched by *katu, amla, lavan, teekshna, ushna, laghu properties,* curd, alcohol, sour fruit items take above mentioned items in large quantities then it leads to increase in Pitta Dosha.

Causes Related to Life Style -

Feelings of anger, fear, when we travel more often, when we start going out in sun more frequently, depression and hopelessness causes the conversion taking place between sanchayavastha and prakopavstha

Causes due to Seasonal Changes -

After rainy season, evening or midnight, summer season, during digestion process, intake of excessive heat producer contents in summer seasons, all these are leads to raise in Pitta Dosha.

Causes of Kafa Dosha Prakopaka:

Causes Related to Diet -

Intake of excessive quantity of sweet, sour, salty, cold, oily food stuff etc. Kafa producing diet, intake of food without digestion of preconsumed food (*Adhyashan*), when *Pathya* and *Apathy* diet is taken together (*Samashana*), curd, milk, rice, sweet fruit all these items are Kafa Dosha producing in intake of excessive quantity.

Causes Related to Life Style -

Do not do exercise, sleeping habit in day, feeling laziness all these are leads to raise in kafa Dosha.

Causes due to Seasonal Changes -

In spring season, early in the morning, *(during poorvanh and pradosha kaal)*, intake of excess cold food in cold season and during digestion these are all Kafa prakopaka factors.

Symptoms of Vata, Pitta, Kafa dosha *Prakopaka:*

In human body due to Vata dosha prakop flatulence and pain in abdomen, due to pitta dosha prakop burning sensation, feeling thirst, acidic flatulence, due to kafa dosha prakop anorexia, nausea etc. symptoms are produces. This is the second stage of treatment. If due to some reasons treatment is not available then this stage gets con-

verted into the next which is called *Prasaravastha Stage.*

3. Prasaravastha-Third Stage of Treatment

If in any pond or tank there is sufficient quantity of water stored but meanwhile some more quantity of water is added to it then the pond or tank gets bursted out and water gets spread everywhere. *(Sushrut Sutra Sthan, Chapter XXI, verse-21)* Similarly in our body also when doshas get sanchya and prakopa stage. They all spread in our body and produce diseases.

Due to vata dosha- flatulence and vimarg gamana, due to pitta dosha –sucking sensation, burning sensation, due to kafa dosha-anorexia, indigestion, vomiting, feeling tired etc. are symptoms produces.

4. Sthansansrayavstha-Fourth Stage of Treatment

In the stage of *Prasaravastha* if you fail to get a proper treatment then it may lead doshas spreading it's arms everywhere in your body and producing disease related pathology and symptoms .This is known as Poorvroop Avastha.

5. Vyaktavastha- Fifth Stage of Treatment

In Sthansansrayavastha pre monitory symptoms (poorv roop) of a disease are produced. If this stage starts stepping forward then the disease comes out with all it's symptoms clearly. This stage is called Vyaktavastha. This condition helps us to diagnose our diseases more specifically. For e.g. we can make out easily weather we are suffering through *Diarrhoea or Fever. Arbuda or Granthi or Vidradhi and so on*. This is the fifth stage of treatment.

6. Bhedavstha- Sixth Stage of Treatment

If *Vyaktavastha* starts progressing then all the diseases enter in an unending situation. This is the sixth stage of treatment. If in this condition an individual is unable to get an appropriate handling then diseases become incurable.

Conclusion:

Like this way Achrya Sushrut described six stages of treatment. If an individual in general, gets knowledge about these six stages then he can decrease his medical problem in some degree. *'Tasyoplabdhirnidanpurvroop-*

lingopshayasampraptih' Acharya Charak has clearly mentioned in it that by the knowledge of *Porvaroopadi* stages doctor gets to know about the specific disease. *(Charak Samhita Nidan Sthan, Chapter 1, Verse 4)*

In Ayurveda Science a particular type of a diet and a life style is mentioned for various type of disease. So whenever we experience any type of symptoms which may be due to Sanchya or Prakopadi stages, we may start adopting an appropriate lifestyle and a suitable diet and when we get time we may consult a doctor for the further and proper treatment.

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Research Paper Commerce

Role of Regional Rural Banks in Rural Development

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ABSTRACT

Rural development is the economic betterment of people and social transformation to provide the rural people with better prospects for economic development there must be an increased participation of people in the rural development programmes, decentralization of planning, better enforcement of land reforms and greater access to credit. In order to provide these Regional Rural Banks (RRBs) have been created with a view to serve primarily the rural India with basic banking and financial services. RRB's have branches set up for urban operations too.

KEYWORDS : Regional Rural Banks,Rural development, rural areas, financial assistance.

Introduction

In India, Regional Rural Banks (RRBs) were established in October 2, 1975. Since its inception, these RRBs have been playing a predominant role in the economic development of rural India. The main motto of establishing these banks in India was to provide credit to the rural people who are living in poverty and economically unsound and to inculcate banking habits among the rural population. NABARD and RRBs have been playing a catalyst role for the development and promotion of rural areas. NABARD has brought in a number of innovations in the rural credit domains which include (a) Formation & Linkage of SHGs, (b) Farmers Club, (c) District Rural Industries Project, (d) Kisan Credit Card (KCC), (e) Rural Infrastructure Development Fund (RIDF), (f) Watershed Development etc. The Regional Rural Banks (RRBs) are aimed at providing credit and other required facilities to the small and marginal farmers, agricultural labourers, artisans and small entrepreneurs in rural areas.

The growth of the rural industries in India and the development of the rural business and economy have been dependent largely on the investment and financial aids provided by the Regional Rural Banks.

The annual report of NABARD 2013-2014 has revealed that against the target of `7,00,000 crore of credit flow to agriculture sector for 2013-14, the banking system has disbursed `7,23,225 crore (provisional) as on 31 March 2014. Commercial Banks, Co-operative Banks and Regional Rural Banks(RRBs) disbursed `5,21,496 crore, `1,18,422 crore and `83,307 crore against their respective targets of`4,75,000 crore, `1,25,000 crore and `1,00,000 crore.

Structure and functions of RRBs

The authorised capital of RRB is fixed at Rs. 1 crore and its issued capital at Rs. 2 lakhs. Of the issued capital, 50 per cent is to be subscribed by the Central Government, 15 per cent by the concerned State Government and the rest 35 per cent by the sponsoring bank. The working and management of the RRBs are directed and managed by Board of Directors consists of a Chairman, three directors who are to be nominated by the Central Government, and not more than two directors to be nominated by the State Government concerned, and not more than 3 directors to be nominated by the sponsoring bank. The chairman is appointed by the Central Government and he holds office for a period of five years.

OBJECTIVES OF THE RRBS:

Main objective of the Regional Rural Banks are:

1. To provide the financial facilities for the development of agriculture trade, commerce and other productive activities to the economically and socially marginalized,
2. To provide low-cost banking facilities to the poor,
3. To provide employment facilities to the weaker sections by appointing them as the works of RRBs and
4. To raise the standard of living for the socio-economic upliftment of the weaker sections of the rural society.

Functions of the RRB:

The RRBs have been established to perform the following functions:

(1) Granting of loans and advances to small and marginal farmers and agricultural labourers, individually or in groups, and to co-operative societies, agricultural processing societies, co-operative farming societies, primarily for agricultural purposes or for agricultural operations and other related purposes;
(2) Granting of loans and advances to artisans, small entrepreneurs and persons of small means engaged in trade, commerce and industry or other productive activities within its area of co-operation; and
(3) Accepting deposits.

Regional Rural Banks in India

The State Bank of India is one of the major commercial banks having 30 Regional Rural Banks in India across 13 states. Apart from the SBI, several other banks are also functioning as the promoter of rural development in India.

The other Regional Rural Banks in India and their major role in rural development can be summed-up as follows:

Haryana State Cooperative Apex Bank Limited

The main purpose of this bank is to financially assist the artisans in the rural areas, farmers and agrarian unskilled labor, and the small rural entrepreneurs of Haryana.

Haryana State Cooperative Apex Bank Limited generally referred as the HARCOBANK, is one of the apex organizations in the state of Haryana. The HARCOBANK holds a special economic position in the state of Haryana and offers several types of financial assistances to the individuals. The financial aids include credit for the promotion of agriculture, non-agrarian credit, and bank deposit facilities. The HARCOBANK has also been functioning as an investor for more than three decades.

National Bank for Agriculture and Rural Development

National Bank for Agriculture and Rural Development (NABARD) was established as the premiere rural development bank with the main purpose of providing credit for the development and publicity of small scale industries, handicrafts, rural crafts, village industries, cottage industries, agriculture and many more. The NABARD also supports all other related economic operations in the rural sector for the promotion of sustainable growth in the rural sector. The NABARD also plays the role of a contributor to the rural development by promoting institutional development, facilitating refinance to loan providers in the rural sector, inspection, monitoring, and evaluation of client financial corporations.

Sindhanur Urban Souharda Co-operative Bank

The main purpose of the Sindhanur Urban Souharda Co-operative Bank more commonly known as the SUCO Bank is to provide financial support to the rural sector.

United Bank of India
The role played by the United Bank of India (UBI) as one of the regional rural banks is phenomenal and it has propagated the network of branches to actively take part in the rural improvement and development.

Syndicate Bank
The Syndicate Bank has it grass roots in the rural sector and it has performed actively in the development of the rural sector in India.

Regional Rural Banks in Tamil Nadu
Indian Bank has sponsored two Regional Rural Banks (RRBs) viz., Saptagiri Grameena Bank and Pallavan Grama Bank.

Pallavan Grama Bank with Head Quarters at Salem is operating in 14 districts of Tamilnadu viz., Salem, Namakkal, Krishnagiri, Dharmapuri, Villupuram, Cuddalore, Coimbatore, Karur, Erode, Nilgiris, Vellore, Tiruvannamalai, Kancheepuram and Tiruvallur. It has actively contributed to the growth of the rural sector.

Pandyan Grama Bank is another bank which operates for the development of rural sector.

The third RRB sponsored by Indian Bank is Puduvai Bharathiar Grama Bank at Union Territory of Puducherry with its head quarters at Puducherry.

Conclusion
Since cash flows for agriculture and savings in rural areas for the majority of households are small, the rural population need to rely on credit for other needs. The rural population need access to financial institutions that can provide them with credit at lower rates and at reasonable terms which would prevent them from debt-traps that are common in rural India. Banks can achieve commercial success and helps in societal improvement if it conceives the products and services keeping these segments in mind. Banks must also take adequate steps to strengthen their credit delivery systems for Rural India.

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Research Paper | Medical Science

A Simple Maneuvre for Promising Results - Opening the Winglets of an Arch Bar for Placement of screws: A Technical Note

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ABSTRACT

There are many fundamental appliances that aid for immobilization including splints, ligature wires and arch bars. At present tooth supported appliances that help in immobilization by intermaxillary fixation are most commonly used. In that list, the arch bars consist of half round, half oval or flat wires that are adapted along the labial surfaces of the teeth. They contain elements such as hooks and eyelets that provide support. The use of both arch bars and IMF screws in unison has been studied previously as it combines the advantages of both of these systems. To achieve this purpose, drill holes are made in the space that lies between two winglets of an arch bar, through this, screws are placed at regular intervals in the inter radicular spaces to stabilize the arch bar to the cervical portions of the teeth. The disadvantage of this method, however is that the arch bar is more susceptible to fracture due the weakening of its structure caused by the creation of a perforation. In this technical note, a slight modification of the previous technique has been proposed to avoid the weakening of the arch bar, to successfully combine the benefits of both the arch bars and IMF screws.

KEYWORDS : Arch Bars, Winglets, Intermaxillary Fixation screws, immobilization

Introduction:

The three basic principles of fracture management include reduction, fixation and immobilization. There are many fundamental appliances that aid for immobilization including splints, ligature wires and arch bars. Historically, since the time of Hippocrates, extraoral bandages made of leather or cloth has been used for immobilization. Later, a combination of extraoral and intraoral appliances were developed by which the fractured teeth, alveolar process and the mandible were enveloped with metal and rubber device attached with bandages[1].

At present tooth supported appliances that help in immobilization by intermaxillary fixation are most commonly used. In that list, the arch bars consist of half round, half oval or flat wires that are adapted along the labial surfaces of the teeth. They contain elements such as hooks and eyelets that provide support. Some of the types of arch bars are Sauer's, Hauptmeyer's, Schlampp and prefabricated arch bars like Jelenko, Winter, Erich and Niro[1]. The advantages of arch bars include the reduced need for specialized instruments, ease of adaptation, flexibility to fit to the contours of the teeth and stability, especially in patients who require long term maxillomandibular fixation [2].

Intermaxillary Screws introduced in 1989, have also been studied extensively to serve the purpose of immobilization[3,4,5]. Of late, since 1999, self tapping screws have been used to achieve maxillomandibular fixation [6]. The advantages of IMF screws include reduced risk of glove perforation, saving of operator's time and also since the introduction of plating system for the management of fractures, the time of immobilization has greatly reduced, necessitating only a temporary intermaxillary fixation which is a feasible option with IMF screws.

The use of both arch bars and IMF screws in unison has been studied previously as it combines the advantages of both of these systems. To achieve this purpose, drill holes are made in the space that lies between two winglets of an arch bar, through this, screws of diameter 1.5 mm, are placed at regular intervals in the inter radicular spaces to stabilize the arch bar to the cervical portions of the teeth [7]. The disadvantage of this method, however is that the arch bar is more susceptible to facture due the weakening of its structure caused by the creation of a perforation[8,9,10]. In this technical note, a slight modification of the previous technique has been proposed to avoid the weakening of the arch bar, to successfully combine the benefits of both the arch bars and IMF screws.

Technical Report:

The technique consists of opening of alternate winglets of the arch bar so that the surface area is increased and the arch bar is not weakened by the placement of a perforation (Fig 1). After the arch bar is adapted to the labial surfaces of the teeth, perforations are placed in the places where the winglets have been opened. The perforation is placed with a 701 bur, of diameter 1.1 mm so that 1.5 mm screws are inserted to fix the arch bar, at regular intervals in the inter radicular spaces so as not to damage the roots of the teeth(Fig 2) . At normal circumstances, 4 screws would be sufficient to fix the arch bar. In such a situation, the arch bar can be comfortably fixed in the perforated areas with the other winglets being used for application of some form of intermaxillary fixation (Fig 3).

Discussion:

The disadvantages of using wires for fixation of arch bars include time consumption, perforation risk, and ischemic necrosis of the gingiva due to tightening of these wires, with loss of tooth vitality [3,6]. The disadvantages of using IMF screws include subsequent screw loosening, accidental root perforation and mucosal coverage [3,4]. With the use of screw supported arch bar, dual benefits of, avoidance of use of wire for supporting the arch bars and prevention of screw loosening due to application of the elastics on the arch bar, allowing the immobilization to be placed for a longer duration, can be achieved. Previously, for modifying an arch bar to an screw supported arch bar, perforation holes had been made in the spaces between the winglets[7]. This technique carried the disadvantage of inadvertent fracture of the arch bar due to weakening of its structure caused by the perforation [8,9,10]. Thus, creating a perforation in an expanded surface area proves to be a reliable solution. By the simple technique of opening up a winglet, the surface area can be increased to comfortably create a perforation. The application of the elastics supported by the arch bar reduces the risk of screw loosening. The disadvantage of mucosal coverage can be prevented by placing the screws close to the alveolar mucosa. The application of screws still carries the risk of root perforation

with it, which can be prevented by following a proper technique. Use of this simple maneuver, such as opening of alternate winglets, can greatly help in saving of time, along with deriving the dual benefits of both the arch bar and IMF screws systems in day to day practice. This small modification to bone supported arch bars can go a long way in achieving modifications in arch bars without significantly weakening its structure, so that they can be used for long term maxillomandibular fixation conveniently.

Ethical approval: All procedures performed in studies involving human participants were in accordance with the ethical standards of the institutional research committee and with the 1964 Helsinki declaration and its later amendments or comparable ethical standards.

A written informed consent form in the vernacular language was obtained from the individual participants before the procedure was performed.

The authors have no potential conflicts of interest.

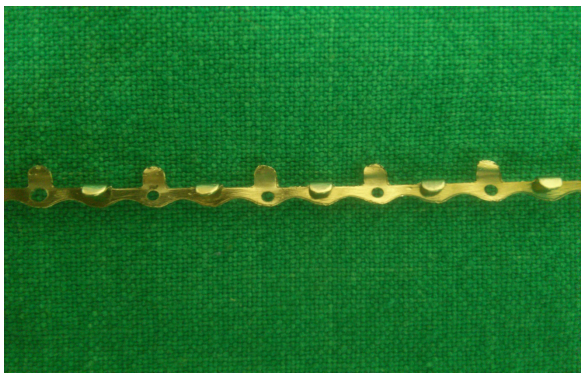

Fig.1

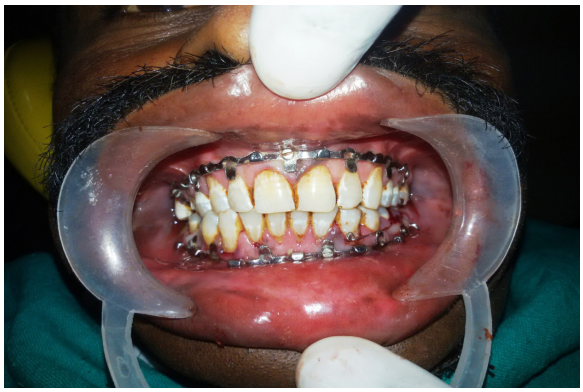

Fig 2

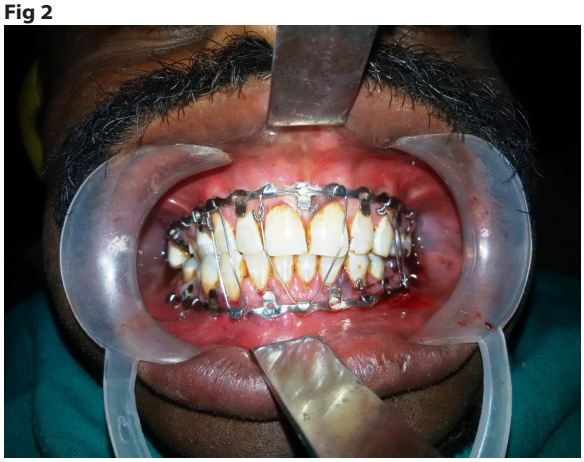

Fig.3

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Research Paper MEDICAL SCIENCES

A Prospective Study of Non Traumatic Ileal Perfoaration

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ABSTRACT

Intoduction: Perforation of the bowel is a serious complication and remains a significant surgical problem in developing nations. It is usually associated with high mortality and morbidity as it occurs mostly in underdeveloped countries in places where medical facilities are not readily available.there is still confusion and controversy over the diagnosis and optimal surgical treatment of non traumatic terminal ileal perforation-a cause of obscure peritonitis.

Objectives: To evaluate the clinical clinical profile, etiology, and optimal surgical management of patients with nontraumatic ileal perfotion. To testify clinical method of anticipating ileal perfoaration by mere perceiving feculent odour of paracentesis fluid.

Methods: This study was a prospective study conducted from August 2013 to December 2014 in department of general surgery, K.R. hospital, Mysore.

Results: There were 24 cases of nontraumatic terminal ileal perforation in the period. The causes for perforation were enteric fever(71%), nonspecific inflammation(20%), obstruction(9%).Primary closure of the perforation (82%) and resection and anastomosis(16%), and defunctioning ileostomy(2%) were the mainstay of the surgical management.

Conclusion: Terminal ileal perforation should be suspected in all cases of peritonitis especially in developing countries and surgical treatment should be optimized taking various accounts like etiology, delay in surgery and operative findings into consideration to reduce the incidence of deadly complications like fecal fistula.

KEYWORDS : ***ileum, perforation, typhoid fever, peritonitis.***

INTRODUCTION:

Perforation of the bowel is a serious complication and remains a significant surgical problem in developing nations like India. Perforation of terminal ileum is a cause for obscure peritonitis, presented as severe abdominal pain associated with diffuse tenderness, guarding and rigidity,starting at periumbilical region and then involving whole abdomen. However for many patients in a severe toxic state, there may be obscured clinical features with resultant delay in diagnosis and adequate surgical intervention. The present study was taken to review our experience of clinical profile and management of terminal ileal perforation in the period of august 2013 to December 2014.

METHODS:

The present study was a prospective study conducted by Department of General Surgery, K.R. Hospital, Mysore medical college, Mysore from august 2013 to December 2014.All the patients were admitted in emergency ward. A thorough history was taken and detailed examination was done. Baseline investigations included complete hemogram, renal function tests, chest xray and xray abdomen in erect posture taken and ultrasonography of abdomen was done. After confirming hollow viscus perforation,to know the perforation site,a diagnostic paracentesis was done. If the fluid is there which confirms peritonitis and the colour and smell of the fluid gives idea of site of perforation. If it is bilious, the perforation is probably duodenal and if it is fecal color and feculent smell, the perforation site is probably ileum. Most of the times the widal test is done postoperatively after typical findings were noted. After thorough resuscitation, the patients were subjected to exploratory Laparotomy under General Anesthesia. Operative findings were recorded and edge biopsy at the perforation site or the resected specimen was sent for histopathological examination. The type of surgical procedure was decided on basis of operative findings. Delay in operation was the time period calculated from the time of onset of severe symptoms like severe abdominal pain, distention and vomiting. Postoperatively the patients were followed up for a period of 6 months.

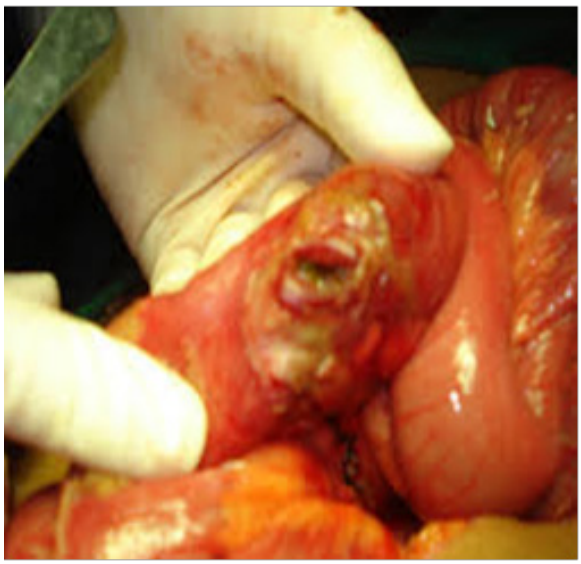
RESULTS:

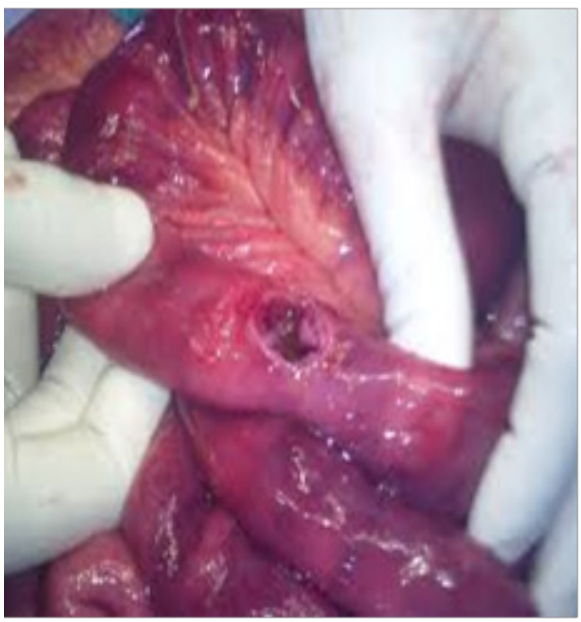
There were a total of 35 cases with perforation of terminal 2 feet of the ileum. 11 of these were due traumatic which were excluded from study. The mean age of the non traumatic ileal perforation was 27.6years. in that, 19 patients were males and 5 patients were females. None were from paeditric group. Pain abdomen was only constant clinical feature in all the patients. Among the investigations, ultrasononography showed free fluid in 85% patients. Radigraphic images showed air under diaphragm in about 62% of patients. Leucocytosis (>11 × 109/L) was present in 27% patients whereas 52% patients had a positive Widal test post operatively. Above all the sensitivity of clinical illustration of smell of paracentesis fluid with feculent odour was found to be 100% (in 21 cases). Only 8% of patients got operated within 24 hrs after estimated time of perforation. Mean delay in operation was 65 hours. The delay was mainly prehospital. On laparotomy 78% of the patients had a single perforation in terminal ileum with majority of patients having a feculent collection in peritoneal cavity. The final diagnosis in majority was enteric fever (71%). Those patients in whom the diagnosis could not be made and the histopathological examination revealed nonspecific inflammation were labeled as nonspecific.These were found to be around 20%. Obstruction at the level of ileo caecal junction causing proximal dilatation thus perforations were found in around 9% of patients. Other causes

of non traumatic ileal perforation like tuberculosis, radiation enteritis were not found.

Among 24 patients, 20 patients underwent primary closure(82%), 3 patients underwent resection anastomosis because of multiple perforations (16%), 1 patient underwent proximal ileostomy(2%).

2 patients had post operative leak who improved with conservative management and 3 patients had abdominal wound dehiscence managed with proper antibiotics and secondary suturing.





both the pictures showing solitary ileal perforation at antimesenteric border.

DISCUSSION:

Non traumatic terminal ileal perforation is still common as a cause for obscure peritonitis in developing and underdeveloped world although in west it is quite rare. The terminal ileal perforation presents a diagnostic dilemma to the surgeon. Laparotomy is usually carried out late often suspecting a perforated appendicitis or a duodenal ulcer. Causes other than typhoid perforations were considered. The clinical features were similar to any other acute abdominal condition. The decision for a laparotomy was mainly clinical supplemented by investigations. However no single investigation was specific. The delay in operation since the estimated time of perforation was mainly prehospital. This is due to the fact that there most of the cases came from remote areas where the medical facilities are scarce. In cases of trauma usually there is no difficulty in management since the tissues are healthy and patients present in good clinical state. Typhoid fever is predominant cause of nontraumatic perforation in developing countries. Typhoid fever, a severe febrile infectious disease caused primarly by Salmonella typhi occurs in areas where poor socioeconomic levels and unsanitary environmental conditions prevail. After ingesting contaminated food, multiplication of bacteria occurs in the reticuloendothelial system during an incubation period of 1–14 days; clinical manifestations start with bacteremia, high-grade fever, signs of systemic sepsis with characteristic normal or low blood counts and anemia-the reason for low incidence of leucocytosis in our study. Later the bacteria become localized in Peyer's patches. These undergo swelling and ulceration that can progress to capillary thrombosis and subsequent necrosis. These ulcerations are always located on the antimesenteric border of the intestine and may perforate, usually in 3rd week of disease. An increase in titer of agglutinins against the somatic(O) and flagellar(H) antigens of S typhi occurs (basis for Widal test). The gut in typhoid fever is edematous and friable (especially last 60 cms). There may be one or several perforations and many other impending perforations, which makes the surgery difficult. Nonspecific inflammation of the terminal ileum was another predominant cause. In such cases, the operative findings were similar to that of typhoid fever but no laboratory evidence of the disease was found. The clinical picture of tuberculous perforation will be that of a diffuse peritonitis and a chest radiograph showing radiological manifestations of tuberculosis. The most common site is the terminal ileum and intraoperative differentiation from Crohn's disease is difficult. These causes are extremely rare in West where Crohn's disease, foreign bodies, perforated diverticula[4] and radiation enterits[5] are important causes. Late presentation, delay in operation(>48 hrs), multiple perforations and drainage of copious quantities of pus and fecal material from the peritoneal cavity adversely affected the incidence of fecal fistula and subsequent mortality[6,7]. The peritoneal fluid content and the delay in operation-perforation time also determine the severity of contamination and friability of gut. Various surgical procedures have been used for distal ileal perforations with variable results. Unfortunately no matter what procedure is used postoperative mortality and morbidity remains high. The most catastrophic complication being the fecal fistula and the wound dehiscence [8]. Primary closure of the perforation with thorough peritoneal lavage is most commonly employed procedure in our setup but in severely contaminated cases with friable terminal ileum (those with delayed presentation, multiple perforations, fecal peritonitis), obviously something more than mere closure of perforations needs to be done to reduce the incidence of most deadly complication like fecal fistula. Resection anastomosis carried a high morbidity and mortality[9]. Ileostomy would have been ideal but its maintainence in our underprivileged and the need for second operation discouraged us from its frequent use. In such circumstances end to side ileotransverse anastomosis with closure of distal stump is a better procedure.

CONCLUSION:

Terminal ileal perforation should be considered as a possibility in obscure peritonitis.. Early diagnosis and treatment avoids extensive procedures and is associated with lower morbidity and mortality. The preoperative diagnosis is usually made in an endemic country except in patients who are moribund; there has to be a high level of suspicion. Investigation aid in diagnosis but no single investigation is diagnostic. However the clinical method of act of perceiving the odour of paracentesis fluid which is taught by clinical veterans, gives a break through diagnosis.this clinical vignet stands test of time in this era of modern investigations. In developing countries enteric perforation is a strong possibility. Non specific inflammation and tuberculosis are other causes in developing countries. The operative findings are typical with most enteric perforations on the antimesenteric border of terminal 60 cm of ileum. The operative management consists of thorough peritoneal lavage with closure of perforation. However in the patients where the terminal ileum is grossly inflamed with multiple perforations, perforation-operation delay >48 hours, fecaloid peritonitis prognosis is poor irrespective of type of surgery.

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Research Paper MEDICAL SCIENCES

Intraoral Dermoid Cyst- A Rare Case Report

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DR.R.SATHYA NARAYANAN

DR.G.SURESH KUMAR

ABSTRACT

Dermoid cyst are usually a congenital origin and although they may present at birth, but they do not clinically evident until early adulthood. Although, a dermoid cyst may occur in head and neck region, the intraoral dermoid cyst are rare. Here we present a case of intraoral dermoid cyst in sublingual region, who underwent surgical excision.

KEYWORDS : Cyst, Floor Of Mouth, Dermoid Cyst, Epidermoid

INTRODUCTION:

Dermoid cyst of the oral cavity are very rare cystic lesions of dysembryogenic origin.These cystic lesions may arise from sequestration of ectodermal and mesodermal cells in the midline during the fusion of first and second branchial arches .This may takes place at 3rd or 4th week of development. But clinically this lesion may occur commonly in second or third decade of life due to unknown proliferative stimulation . The primary site of dermoid cyst are ovaries and testes, although they may occur at any fusion point of human body.Dermoid cyst may occur very rarely in head and neck region approximately 7% and the commonest site in head and neck area is external third of eyebrow.The reported incidence of dermoid cyst in floor of the mouth is 1.6%.The size of lesion may vary from few millimeter to several centimeter in diameter. The characteristic feature of dermoid cyst are painless, slow growing lesion in the floor of the mouth and may cause elevation of tongue ,difficulty in speech and presence of double chin. Treatment of dermoid cyst in the floor of the mouth is complete surgical excision. we report a case of dermoid cyst of floor of the mouth of young adult who underwent surgical excision.

CASE REPORT:

A 19 year old female patient reported to Indira Gandhi institute of Dental sciences, puducherry, India with the chief complaint of swelling in the left side of floor of the mouth for the past two years. On examination swelling in the anterior part of floor of the mouth which is elevating the tongue upwards and posteriorly. Despite this there was not much speech impairment. The swelling was more accentuated during swallowing. Intraorally, the floor of the mouth was covered by normal mucosa and fluctuation could not be elicited. Orifice of wharton's duct appears normal. In addition to the above finding there was an extra oral submental swelling which was soft and compressible(-Fig 1). Regional lymph nodes were not palpable. FNAC of the lesion was performed. Aspirate was yellowish creamy material. Ultrasound examination reveals well encapsulated cystic swelling in the floor of the mouth measuring 2.5 x 2.1 x 3.8 cm and its wall thickness ranges from 1.7 to 2 mm. No vascularity seen in the swelling. Computerized tomography (CT) of the lesion (fig 2) with contrast enhancement was done which showed well defined radiolucency in the floor of the mouth and submental space suggestive of cystic lesion.

The patient underwent surgical excision under general anesthesia by intraoral approach(fig 3). Mouth prop was placed in opposing arch. A traction suture was placed in tip of the tongue and pulled upward and forward for ease access of the lesion. The mucosal incision was placed in left side of floor of the mouth just parallel and lateral to submandibular duct. Blunt dissection done to expose the roof of the lesion. Due to its thickened wall, the lesion was easily removed in toto (fig 4) by blunt dissection.

DISCUSSION

In 1998 Acree et al described the pathogenesis of dermoid cyst .According to him there are two theories of origin. The first one congenital origin thought to develop from epithelial nests which entrapped in midline during closure of first and second branchial arches. The second one noncongenital orgin thought to arise due to traumatic occlusion of hair follicles or sebaceous glands.

Histologically dermoid cyst classified into three types which are epidermoid,dermoid and teratoid.The epidermoid cyst usually lined by simple squamous epithelium with fibrous wall. The second variant demoid cyst lined with keratinized epithelium and contains skin appendages like sweat and sebaceous glands and hair follicles. It is also known as compound cyst. The third variant teratoid also known as complex cyst which lined by various types of epithelium ranges from simple squamous epithelium to ciliated respiratory type epithelium. It contains all the derivatives of ectoderm, mesoderm and endoderm(2). In our case histologic findings consistent with epidermoid cyst .

Dermoid cyst in the floor of the mouth further classified according to their anatomic position in relation to geniohyoid muscle.It may occur either above or below the geniohyoid muscle. If the cyst is located above the geniohyoid muscle may cause sublingual swelling which may displace the tongue upwards towards the palate may cause difficulty in speaking, eating and breathing. This type of cystic lesions are also known as genioglossal cyst or sublingual cysts. If the cyst occurs below the geniohyoid muscle may cause submental swelling appears as double chin. This kind of cyst also known as geniohyoid cyst.

Carcinomatous transformation of dermoid cyst has been reported.The ideal treatment for dermoid cyst is complete surgical excision through intraoral or extraoral approaches depends on location & size of dermoid cyst. If the cyst is located above the geniohyoid muscle may be removed through intraoral approach.But if cyst is located below the geniohyoid and larger cysts may be removed through submental approach. In 1981 Rapidis et al suggested that almost all the lesions of dermoid cyst in the floor of the mouth can be removed through intraoral approach even in cases of larger cysts(1). But both the approaches have their own advantages and disadvantages. Intraoral approach has high risk of infection but in case of extraoral approach there will be a visible scar in the submental region. In our case we operated through intraoral approach and avoided the visible submental scar in young adolescent girl. Because of its dense fibrous wall, the cystic lesion was removed in toto.

Fig 1: Preoperative picture showing swelling in submental region

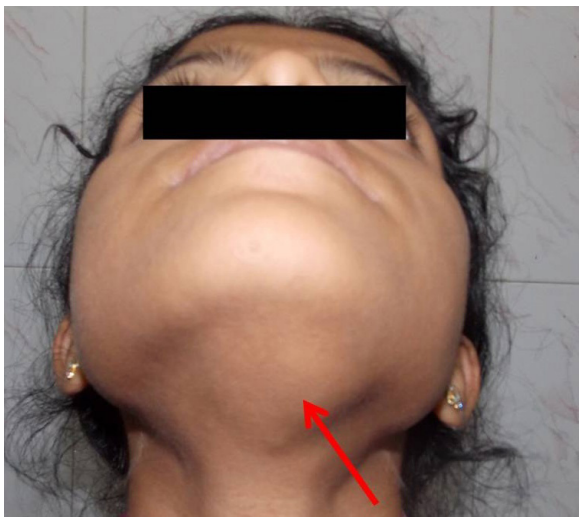


Fig 2: CT showing dermoid cyst in floor of the mouth

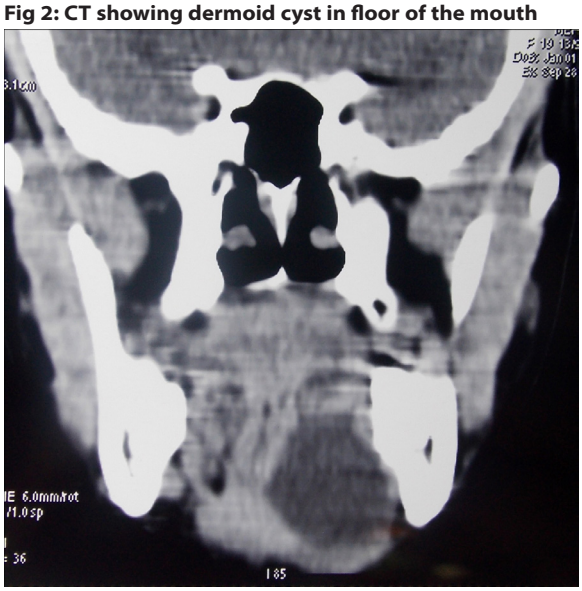


Fig 3: Intraoperative picture showing dermoid cyst removal through intraoral approach

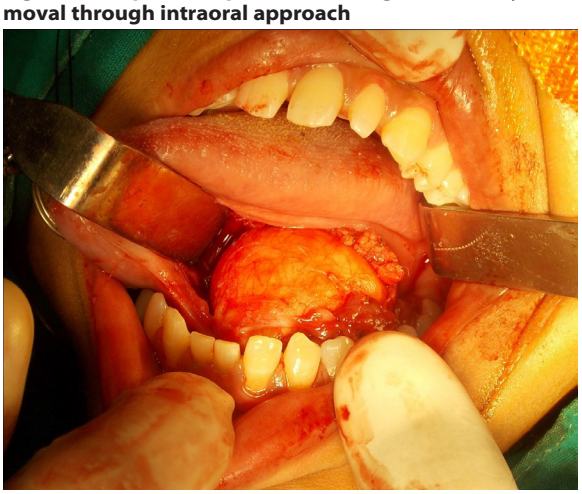
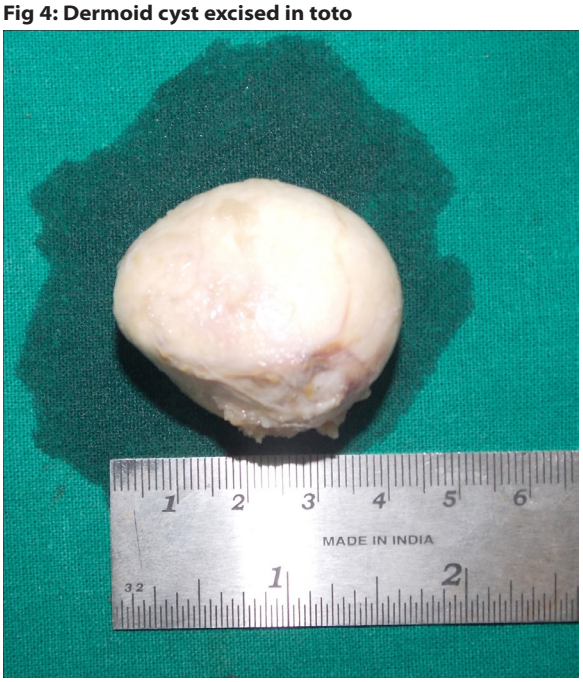


Fig 4: Dermoid cyst excised in toto



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Research Paper MEDICAL SCIENCES

A Study to Assess Psychosocial Problem in Children with Skin Disease in A Selected Hospital in Mangalore

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ABSTRACT

Living with psychosocial problem, especially if it is chronic or recurring, can make them exhausted, overwhelmed and helpless. Recognizing the negative thoughts is a part of the psychosocial patient road to recovery. Materials and methods: A descriptive research design was used for the present study. The sample consisted of 100 dermatological patients.Data was collected by administering rating scale. Results: The findings of present study highlights that that majority, 54% of subjects have severe psychosocial problems, 31% have moderate psychosocial problems and 15% of subjects have mild psychosocial problems. Conclusion: It has been estimated that children with dermatological conditions have an increased risk of developing psychosocial problems in their life. Association between psychosocial problem and skin disease highly depend on the severity of the condition.Keyword: Skin disease, Psychosocial Problem of children.

KEYWORDS : Skin disease, Psychosocial Problem of children.

INTRODUCTION:

According to World health organization (WHO) health is viewed as "a state of complete physical, mental and social wellbeing not merely the absence of disease or Infirmity".[1]When we critically analyze the definition, there is a triad of physical, mental and social wellbeing, which determines our health. If anyone of this triad component is affected, then there is a possibility of illness. So it is important to keep balance between mind, body and spirit, then you will achieve a perfectly balanced life. Here we can conclude than anything alters mind will affect body also.

Today, psychosocial problem is estimated to affect 350 million people.[2] Psychosocial problems often start at a young age; they reduce people's functioning and often are recurring. For these reasons, psychosocial problems is the leading cause of disability worldwide in terms of total years lost due to disability. So psychosocial problems can affect anyone and it is one of the most widespread illnesses, often coexisting with other serious illness.[3]

When a person develops a skin problem, it can affect a whole lot more than his/her physical appearance.[4]Looking at the mirror and seeing unsightly blemishes makes it tough to feel confident. In dermatological patients the prevalence of psychosocial problem is around 30% which is more in comparison to patients in general practice where prevalence of psychosocial problems is 22%.[5]A review of literature suggests that psychosocial problems affect children with disorders in dermatology. In many cases, psychosocial problem is undetected and undertreated in the primary care settings, particularly, in the busy dermatology clinics. The aim of the present study is to estimate the prevalence of psychosocial problems in children with skin diseases using the modified Beck youth inventory scale.

OBJECTIVES:

1. To assess psychosocial problem of children (12-16yrs) with skin disease.
2. To find the association between psychosocial problems of children (12-16 yrs) with skin diseases and selected demographic variables.

MATERIALS AND METHODS:

1. Setting: The study was conducted in Dermatological OPD in Father Muller Medical College Hospital, Mangalore
2. Research approach: The approach used for this study was descriptive approach.
3. Research design: Descriptive survey design
4. Sample: 100 children who came with selected skin disease.
5. Sampling technique: purposive sampling technique.
6. Inclusion criteria:
   - Children of 12-16 yrs with skin diseases in selected OPD in Mangalore.
   - Children diagnosed with atopic dermatitis, acne vulgaris, hives, vitiligo, eczema, urticaria and undergoing treatment in Father Muller Medical College Hospital
7. Exclusion criteria:
   - Children those who can't speak English
8. Data collection instruments:
   - Baseline proforma
   - Modified Beck youth inventory scale
9. Description of tool:

The tool consisted of two aspects:

Tool 1: Baseline Performa

This tool had total of 17 items such as age, gender, religion, educational status, family income per month, place of residence, type of family, duration of illness, area of body affected, diagnosis, treatment cost, type of management other than allopathic, no of doctors consulted, source of knowledge about dermatological problems and history of mental illness in family.

Tool 2: Modified Beck youth inventory scale

This tool was prepared after reviewing the standardized Beck youth inventory scale42 based on the first objective of research study. The original version contains 21 items, but after consulted and discussed with various experts it was modified into 12 items. Then the 12 items were categorized into four major areas such a stress-3 items (62.83%), low self esteem-4 items (63.75%), absenteeism/self withdrawl-2 items (46.5%), stigma/ isolation-3 items (54.33%). This tool was a 3 point rating scale with maximum score of 24 and minimum score of zero.

10. Data collection procedure: The investigator obtained permission to conduct the study from the concerned hospital authority and informed consent was taken from subjects. Purposive sampling technique was used. Data was collected through a rating scale for assessing the level of psychosocial problems.

Major findings of the study:

The data was analyzed presented and under the following heading:

Section 1: Sample characteristics

- Data shows most of the subjects are of 12 years (35%) and least subjects (4%) belonged to age group 16.
- Data shows that 61% belongs to urban area and 39% belongs to rural area.
- Majority of subjects ie, 64% of them have illness for less than 2 months duration and minority ie, 16% of them have illness for more than 6 months of duration.

- Data shows 65% of subjects have illness in unexposed area and 35% have illness in exposed part of body.
- Data reveals that majority of children are diagnosed as having acne vulgaris ie, 36% and 7% diagnosed as having urticaria.**(figure 1)**
- Most of the subjects, i.e. 43 (43%) belonged to treatment cost of 501-1500 rupees/month and minority ie, 5 (5%) subjects treatment cost were more than 2500rups/month.
- Data shows majority of subjects i.e. 58 (58%) had taken only allopathic treatment and 42 (42%) subjects had taken treatment other than allopathic.

Section 2: Level of psychosocial problem in children.
Figure-2

- Figure-2 shows that 54% of subjects have severe psychosocial problems and 15% of subjects have mild psychosocial problems

Section 3: Domain wise mean standard deviation and mean percentage of psychosocial problem

Table:1 Domain wise distribution of mean standard deviation and mean percentage of psychosocial problem.

The data in table 3 shows mean score of area 1 (stress) is 3.77 and area 2 (low self esteem) is 5.10, area 3 (absenteeism / self withdrawal) is 1.86 and area 4(stigma/isolation) is 3.26.The standard deviation of area 1 (stress) is 1.846 and area 2 (low self esteem) is 1.226, area 3 (absenteeism / self withdrawal) is 0.864 and area 4 (stigma / isolation) is 1.088.The mean percentage of depression score of area 1 (stress) is 62.83% and area 2 (low self esteem) is 63.75%, area 3 (absenteeism / self withdrawal) is 46.5% and area 4 (stigma / isolation) is 54.33%.

Section 4: Association between psychosocial problems and demographic variables.

There is no significant association between psychosocial problem of children with skin disease and selected demographic variables

Figure 1: Bar diagram showing distribution of subjects according to their diagnosis

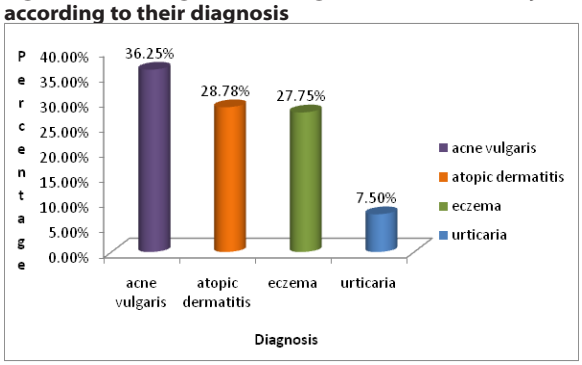

Figure 2: Distribution of level of psychosocial problem in children

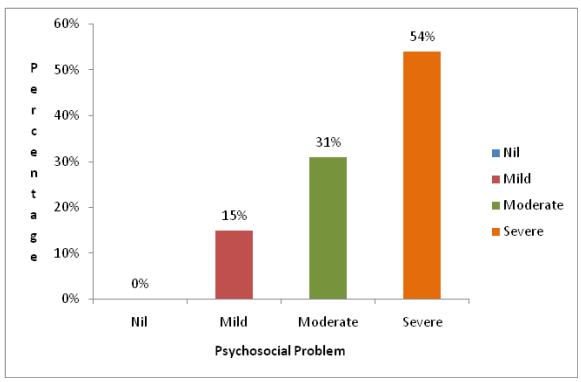

Table 1: Domain wise distribution of mean standard deviation and mean percentage of psychosocial problem score.
N=100

AREA	MAXIMUM SCORE	RANGE	MEAN±SD	MEAN PERCENTAGE OF PSYCHOSOCIAL SCORE
Stress	6	0-6	3.77± 1.85	62.83%
Low self esteem	8	0-8	5.1± 1.23	63.75%
Absenteeism/ self withdrawl	4	0-4	1.86±0.86	46.5%
Stigma/isolation	6	0-6	3.26±1.08	54.33%

Maximum score:24

Discussion

Section 1: Sample characteristics

- Data shows most of the subjects are of 12 years (35%) and least subjects (4%) belonged to age group 16.
- Data reveals that 60% were males and females were 40%.
- Data shows that 61% belongs to urban area and 39% belongs to rural area.
- Data reveals that 56% are from nuclear family, 30% from joint family and 14% from extended family.
- Present study shows majority of subjects ie 64% of them have illness for less than 2 months duration, and 16% of them have illness for more than 6 months of duration.
- Majority of subjects (43%) spend around 501-1500 rupees/ month for treatment cost.
- Also most of subjects (58%) had taken only allopathic treatment.

Similar study conducted in Denmark also taken the subjects as psoriasis (23.7%), eczema (17%), Urticaria (9.3%) and other diagnoses including acne were (50.4%). Another study conducted in Saudi Arabia also showed that most of the patients taking treatment on outpatient basis has illness for less than 2 months.

Section-2: Distribution of level of psychosocial problem in children

In the present study shows that shows that 54% of subjects have severe psychosocial problems 31% have moderate psychosocial problems and 15% of subjects have mild psychosocial problems.

A cross sectional study was conducted in Israel to evaluate the prevalence of psychosocial problems in dermatological patients. The study included 384 patients. The screening questionnaire identified 37 patients (9.6%) with major psychosocial problem, 3 patients with mild (0.8%) and 74 patients (19.3%) with moderate symptoms.

A study conducted to determine the frequency of psychosocial problem in dermatology outpatients in Pakistan shows that 34.11% had psychosocial problem. The frequency and percentage of psychosocial problem in dermatological conditions was 66.6% in Urticaria, 66.6% in pruritis, 57.5% in acne vulgaris 50% in psoriasis and 20% in eczema.

Hence from the above findings depict that the dermatological patients are more prone to get psychosocial problems in their disease process.

Section-3: Domain wise distribution of mean standard deviation and mean percentage of psychosocial problem

Mean score and SD of area 1 (stress) is 3.77±1.846 and area 2 (low self esteem) is 5.10±1.22, area 3 (absenteeism / self withdrawal) is 1.86±0.86 and area 4 (stigma / isolation) is 3.26±1.08. The mean percentage of depression score of area 1 (stress) is 62.83% and area 2(low self esteem) is 63.75%, area 3 (absenteeism / self withdrawal) is 46.5% and area 4 (stigma / isolation) is 54.33%.

Section-4: Association between psychosocial problem and selected demographic variables

Present study shows that there is no significant association of psychosocial problem and demographic variables.

A study conducted in Iran also shows that there was no association between Psychosocial problem associated with gender, married people and single ones and age of patients who were suffering from dermatological disorders.

Hence in agreement with other studies, no significant associations were found between psychosocial problem and age, gender, diagnosis, disease duration and area of body affected. Hence present study suggest that increased health education coordinated with intensified medical care should be provided to dermatological patients

Conclusion

Dermatological disorders can cause emotional disturbances, which may cause significant psychosocial disability and distress. These patients often have unambiguous ideas about the causes, controllability, consequences and expected time, course of their disease. The main purpose of the study was to determine the psychosocial problems of children with selected skin disease. This study adds to the limited Indian literature and psychosocial problems among children

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Research Paper Commerce

Indian Capital Market: Issues and Challenges

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ABSTRACT

Capital market deals with medium term and long term funds. It refers to all facilities and the institutional arrangements for borrowing and lending term funds (medium term and long term). The demand for long term funds comes from private business corporations, public corporations and the Government. The supply of funds comes largely from individual and institutional investors, banks and special industrial financial institutions and Government. Modern capital markets are almost invariably hosted on computer-based electronic trading systems, most can be accessed only by entities within the financial sector, but some can be accessed directly by the public. Despite fast economic growth, India still faces massive income inequalities, high unemployment and malnutrition. India needs to follow through with deeper and more wide ranging reforms which will bring the regulatory environment and the framework of the economy to a level which can cope with the challenges of growth. The present paper aims at focusing the issues and challenges of Indian capital market in current scenario and also suggests necessary policy reforms for a relatively effective capital market.

KEYWORDS : Capital Market, Government, Funds and Economic

INTRODUCTION

A capital market is a market for the buying and selling of long-term debt or equity-backed securities. In other words, it is defined as a market in which money is provided for a period of more than a year. These markets direct the wealth of savers to those who can put it to long-term productive use, such as companies or Governments making long-term investments. The capital market includes the stock market where the equity securities are traded and the **bond market** where the debt securities are traded. Financial regulators, such as the India's Securities and Exchange Board of India (SEBI) or the U.S. Securities and Exchange Commission (SEC), administer the capital markets in their designated jurisdictions to ensure that *investors are protected against fraud*, among other duties. Certain rules and regulations are formulated by them which must be stick on to so as to safeguard the interest of the investors. Modern capital markets are almost invariably hosted on computer-based electronic trading systems, most can be accessed only by entities within the financial sector or the treasury departments of Governments and corporations, but some can be accessed directly by the public. There are many such systems, most serving only small parts of the overall capital markets. Entities hosting the systems include stock exchanges, investment banks, and government departments. Physically the systems are hosted all over the world, though they tend to concentrate in the countries like USA, U.K etc.

DIVISION OF THE CAPITAL MARKET

A division within the capital markets is between the primary markets and secondary markets. In primary markets, new stock or bond issues are sold to investors, often via a mechanism known as underwriting. The main entities seeking to raise long-term funds on the primary capital markets are Governments and business enterprises. Governments tend to issue only bonds, whereas, companies often issue either equity or bonds. The main entities purchasing the bonds or stock include pension funds, hedge funds, sovereign wealth funds, and less commonly wealthy individuals and investment banks trading on their own behalf. In the secondary markets, securities existing are bought and sold among investors or traders, usually on an exchange, over-the-counter, or elsewhere. The existence of secondary markets increases the willingness of investors in primary markets, as they know they are likely to be able to rapidly cash out their investments if the need arises.

Based on the type of securities traded capital market is divided into two parts i.e., stock market and bond market.

(i) Bond Market - The bond market which is also known as the credit, or fixed income market is that part of capital market where participants buy and sell debt securities which are usually in the form of bonds.

(ii) Stock Market - A stock market or equity market is a public entity for the trading of company stock i.e., shares and derivatives at an agreed price. For Example: Bombay Stock Exchange or BSE is one of the oldest stock exchanges and also enjoys its stature of being the fourth largest stock exchange in Asia, deals with the trading of securities where about 5,085 Indian companies are listed.

The Securities Industry and financial markets Association (SIFMA) classifies the bond market into five different specific segments:

- Government & agency
- Funding
- Corporate
- Municipal
- Mortgage backed, asset backed, and collateralized debt obligation

ROLE OF THE INDIAN CAPITAL MARKET

The primary role of the capital market is to raise long-term funds for Governments, banks, and corporations while providing a platform for the trading of securities. This fundraising is regulated by the performance of the stock and bond markets within the capital market. The member organizations of the capital market may issue stocks and bonds in order to raise funds. Investor can then invest in the capital market by purchasing those stocks and bonds. The capital market, however, is not without risk. It is important for investors to understand market trends before fully investing in the capital market. To that end, there are various market indices available to investors that reflect the present performance of the market. Ratios relating to Indian capital Market are presented below in the table 1.

Table 1: Market Capitalization to GDP Ratio (percent)

Year	BSE Market Capitalization to GDP Ratio	NSE Market Capitalization to GDP Ratio	Derivatives Segment (BSE + NSE)
2010-11	87.7	86.0	375.2
2011-12	69.2	67.0	358.3
2012-13	63.2	61.7	382.6
2013-14	65.3	64.1	417.7

Source: SEBI Annual Report, 2013-14

In the table 1, the ratios such as market capitalization to GDP (m-cap ratio), traded value to GDP (traded value ratio) and price to earnings per share (P/E ratio) are monitored to gauge the extent of development of stock market. After declining for three successive years the market capitalization ratios have improved during 2013-14. The BSE market capitalization to GDP ratio has increased from 63.2 percent in 2012-13 to 65.3 percent in 2013-14. Similarly, at NSE also the ratio has increased from 61.7 percent in 2012-13 to 64.1 percent in 2013-14. The all-India cash turnover to GDP ratio however declined further in 2013-14 to 29.5 percent from 32.2 percent in 2012-13. In the derivative segment, there was a substantial increase in the turnover-GDP ratio from 382.6 percent in 2012-13 to 417.7 percent in 2013-14.

ISSUES AND CHALLENGES OF THE INDIAN CAPITAL MARKET

Indian Economy is the tenth largest economy in the world by nominal GDP and the fourth largest by purchasing power parity (PPP). Following a strong economic reform post-independence socialist economy, the country's economic growth progressed at a rapid pace, as the LPG policy was implemented in 1991 for international competition and foreign investment. Despite fast economic growth, India still faces massive income inequalities, high unemployment and malnutrition.

Given below are the significant issues and challenges of the Indian capital market:

- **Inflation** – Inflation is the rate at which the prices for goods and services are rising and subsequently, purchasing power is falling. The inflation situation in the economy continues to be a cause of concern. Despite tightening of the monetary policy by the apex of India, RBI and other steps taken by the government, inflation continues to remain close to the double digit mark. High international oil prices, high global food prices are some of the causes of high inflation.
- **Non uniform Tax reforms** - With the non uniformity in the tax system across the states it is a difficult task to carry out the businesses which resulted in undergrowth of the same. The different tax rates implemented in some states across pan India is a major challenge to carry out the business smoothly and also it accounts for a reason of increasing prices of goods and services.
- **Population** – The current population of India is over 1.27 billion, making it the second most populous country in the world after China, with over 1.35 billion people. India represents almost 17.99% of the world's population which is a serious concern. If the trend of growth continues, the crown of the world's most populous country will move on India from China by 2030. The population growth rate is at 1.58% with which it is predicted India would reach 1.5 billion mark by 2030.
- **Education and Unemployment** – 9.4 % of the population is unemployed which is yet another alarming issue for the growing nation. The literacy rate in India is 74.04% as of April 2011 population census which constitutes of 65.46% females and 82.14% males. The literacy rate is increasing but the rate of increment is low, which again is a matter of concern.
- **Index of Industrial Production** – Weakness in industrial production trend continues to be a point of concern for the economy. The recent IIP numbers was registered below expectation. Weakness was seen with growth in the capital goods segment, intermediate goods segment and consumer goods segment which slowed down drastically during these months.
- **Foreign Policy** – Foreign investment flows into India saw a dip of about 3% in the year 2013 over the previous year. This dip is largely on account of a slowdown seen in case of FDI. In 2012, India attracted US$ 22.78 billion of FDI, which was reduced to US$ 22.03 billion in 2013.
- **Poverty** – About 37 % of Indian population lies below poverty line which is a very alarming situation for a growing economy like India. The main reason for such diversity is the uneven distribution of wealth in the economy where a handful of people are the owner of maximum revenue and the majority of the population is too poor to even arrange for their daily bread. The poor people are high in number, while the high net worth people is very few in numbers.

SUGGESTIVE REFORMS

India needs to follow through with deeper and more wide ranging reforms which will bring the regulatory environment and the framework of the economy to a level which can cope with the challenges of growth. The following reforms are suggested:

- Expand the retail investor base for a developed Capital market, and also enhance the investor morale and domestic allocation. Investors' confidence need to be rebuilt through, enhanced investor protection, better transparency, market integrity, market efficiency and enhanced quality of supervision over market intermediaries.
- India has to streamline financial market regulatory architecture and move to single window approval process because there is an urgent need of redefining regulatory architecture gaps. The over lapping regulatory body is the major cause of ineffective regulations, inability and delay in exploring new markets and products design etc. for e.g. the most recent conflict between IRDA and SEBI over Unit Linked Insurance Plans (ULIP).
- Target Tier II and Tier III cities because, the share of household savings invested inequities are low and there is availability of immense potential in Tier II and Tier III cities. These cities should be the central point to attract investment in Capital Markets. This can be achieved by organizing investor awareness programmes and also few special incentive schemes may be launched for these regions.
- An initiative has to be taken for the increasing amounts of domestic savings and global investment into the infrastructure sector and other productive sectors. Initiatives required to be taken is (i) liberalizing buyback regulations to allow vendors of major equipments to hold equity in initial stages and buying back such equity when projects get operational; (ii) Allowing Private Equity Funds as bidding partners in infrastructure projects (iii) allowing pension funds to invest a greater part of their corpus in equities either directly or through mutual funds to infrastructure projects; and (iv) encouraged private initiatives.
- To focus on other instruments like Mutual Funds other than the equities where the funds are managed by big firms and portfolio managers.
- India's warrants market is underdeveloped due to challenges in participation, product design and pricing, therefore allow registered, well-capitalized entities with risk management capabilities to act as third-party issuers for warrants, trading of preferentially allotted warrants in the secondary market and introduce multiple warrant products to meet diverse investor needs.
- Interest-rate derivatives are needed to hedge rate risks, the largest macro-economic risk. Globally, interest rate derivatives constitute the largest part of derivatives turnover on both exchange traded as well as OTC products. In India, interest-rate derivates account for less than 1 per cent of turnover.
- Deepen corporate bond, Deepen warrants market, Deepen interest futures market and streamline securities lending and borrowing. Allow pension funds to invest in investment-grade corporate bonds, credit hedging instruments such as Credit Default Swaps and insurance companies to invest in all investment-grade corporate bonds, creating a liquid benchmark index that can be used for pricing.

CONCLUSION

India has successfully implemented the first phase of reforms in 1990s which slowed down. India needs to follow through with deeper and more wide ranging reforms which will bring the regulatory environment and the framework of the economy to a level which can cope with the challenges of growth. Emerging economies like India have an advantage of learning from the mistakes of others. Policy makers must ensure broad and deep financial market. A practical approach is required by both regulator and service provider. Regulation must not create hurdle for financial engineering and innovation and service

providers must not create a situation of moral hazard by insensitive approach. Innovate for inclusive growth rather growth of balance sheet figure. As India is poised to develop as a super economic power it must address various challenges associated with the development of capital on priority. It has scope of development in sectors like Pharmaceuticals, Retail industry, Automobiles, Education, etc. FDI should be allowed in sectors to attract the foreign investors though keeping our own economy stable of its own and not mostly dependent on global market. Inter and Intra terrestrial issues should be dealt with proper policy making and private players should be encouraged in other sectors also so as to enhance the overall growth of the capital market and the economy.

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Research Paper Education

Influence of School Environment on Emotional Maturity of High School Students

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ABSTRACT

The present study aimed to study the influence of school environment and its dimensions on emotional maturity of high school students. The investigator has used simple random sampling technique to select the sample for the present investigation. The representative sample consisted of 972 high school students. Survey method of research was adopted for the present study. The tools used in the study were Emotional Maturity Scale and School Environment Scale. The investigator used regression analysis to find out the influence of dimensions of school environment on emotional maturity of high school students. The results showed that there is significant influence of school environment and its dimensions such as creative stimulation, cognitive encouragement, permissiveness and physical school environment on emotional maturity of high school students. One of the dimension namely creative stimulation has more impact on emotional maturity of high school students.

KEYWORDS : School Environment, Emotional Maturity, Tirunelveli District, Regression Analysis

INTRODUCTION

Child spends most of the time at the school interacting with the school environment. And, it stands as one of the basic factors of learning. Bertrand Russell(1984) says, "I have no doubt in my own mind that the ideal school is better than the ideal home….because it allows more light and air, more freedom of movement, and more companionship of competencies." Thus in any socio-political system stands as a sub-system and functionally works as socializing the individuals to develop commitments and capacities which are essential pre-requisites of their future role performance expected by the society. Positive social relationships and attitudes about school are as important to the environment as are safe and well-kept buildings and grounds. A safe, clean, and well-maintained school with a positive psychosocial climate and culture can foster emotional maturity, which in turn boosts students health as well as students' educational achievement. The psychological environment includes the physical, emotional and social conditions that affect the well-being of students. Students embrace their environment when they believe that the adults in the school care about their learning and about them as individuals. Students are more likely to succeed when they feel a good bond to School. As Individuals, students who perceive their teachers and School administration as creating a caring, well-structured learning environment in which expectations are high, clear, fair are more likely to be connected to the school and thrive. In the school, the teachers have the new environment of the school the child's physical, emotional, mental, moral and social development takes a new shape. This new shape puts him much ahead in the race of development.

SCHOOL ENVIRONMENT

A healthy school environment includes the physical and aesthetic surroundings and the psychosocial climate and culture of the school. Factors that influence the physical environment include the school building and the area surrounding it, biological or chemical agents, and physical conditions such as temperature, noise and lighting. The psychological environment includes the physical, emotional and social conditions that affect the well-being of students and staff.

EMOTIONAL MATURITY

Emotional maturity is that characteristics of emotional behaviour that is generally attained by an adult after the expiry of his adolescence period. After attained emotional maturity, he is able to demonstrate a well balanced emotional behavior in his day-to-day life. A person may be set to be emotionally matured if he has in his positions almost all types of emotional – positive or negative and is able to express from at the appropriate time on appropriate degree. The characteristics of on emotionally matured person. (Mangal, 2007) "Mature" emotional behavior at any level of growth is that which most fully reflects the fruits of healthy development in all the interaction aspects of the growing persons make up. (Charles E Skinner, 2004). According to Singh and Bhargava, (1990) Emotional maturity is not only the effective determinant of personality pattern but also helps to control the growth of an adolescent's development. A person who is able to keep his emotions under control who is able to brook delay and to suffer without self-pity might still be emotionally stunned.

SIGNIFICANCE OF THE STUDY

The environment is more than physical space because it contains the emotions of the children who spend time in it, the staff that work there and the parents who leave their children there. The emotional environment is an invisible measure of 'feelings' – sometimes it can have a 'feel-good' factor where the children, staff and parents feel positive, and at others it can have a 'not-so-good' feel about it when children, staff or parent are down or unhappy. Maintaining positive feelings is important for staff, children and parents, but equally. If they feel safe in the emotional environment, children can express their feelings safely, knowing that their parents or staff are nearby to help them if they feel overwhelmed by these. Teaching children ways to talk about and express their feelings allows them to externalise them safely, rather than to cover them up and leave them hidden away. Feelings which are expressed in safety are far easier to deal with than those which are left unresolved. So school environment plays a main role in the development of emotional maturity of high school students. With this background, the investigator wants to study the influence of school environment and its dimensions on emotional maturity of high school students.

METHOD OF RESEARCH

Survey method of research was adopted for the present study.

OBJECTIVE OF THE STUDY

To study the influence of school environment and its dimensions on emotional maturity of high school students.

HYPOTHESIS OF THE STUDY

There is no significant influence of school environment and its dimensions on emotional maturity of high school students.

TOOLS USED

Emotional Maturity Scale was developed and validated by the investigator to measure the emotional maturity of the high school students. In this Scale, at the end of each statement five graded options were given namely – 'Strongly Agree', 'Agree', 'Undecided', 'Disagree' and Strongly Disagree' having scores 5,4,3,2 and 1 for positive statements

and reverse for negative statements. School Environment Scale was developed and validated by the investigator to measure the school environment of the high school students. In School Environment this Scale, at the end of each statement five graded options were given namely – 'Always', 'Agree', 'Sometimes', 'Very Rarely' and 'Never' having scores 5,4,3,2 and 1 for positive statements and reverse for negative statements. The scale consisted of five dimensions i.e., creative stimulation, cognitive encouragement, permissiveness, acceptance and physical school environment.

POPULATION

The high school students studying in all schools in Tirunelveli district of Tamilnadu state are constituted as population for the study. But it was not humanly possible to include all of them in the study. Keeping in mind time, physical and financial constraints, it was decided to select a small proportion of them for sake of conducting this research study.

SAMPLE

The sample of the study comprised high school students of Tirunelveli district of Tamilnadu state. The investigator has used simple random sampling technique to select the sample for the present investigation. The representative sample consists of 972 high school students from 38 schools, randomly in 19 blocks of Tirunelveli district in Tamilnadu.

STATISTICAL TECHNIQUE USED

The investigator used regression analysis to find out the influence of school and its dimensions of environment on emotional maturity of high school students.

ANALYSIS OF DATA

H0 There is no significant influence of school environment and its dimensions on emotional maturity of high school students.

Table – 1
Influence of school environment and its dimensions on emotional maturity of High School Students

Predictors	B	SE	β	t	Sig.	R	R^2	F	Sig.
Constant	131.800	4.667		28.23	0.00*	0.325	0.322	93.15	0.00*
Creative Stimulation	0.573	0.081	0.279	7.044	0.00*				
Cognitive Encouragement	0.456	0.103	0.187	4.423	0.00*				
Permissiveness	0.282	0.104	0.104	2.715	0.007*				
Acceptance	-0.013	0.101	-0.004	-0.130	0.897*				
Physical School Environment	0.153	.037	0.123	4.122	0.000*				

*Significant at 1% level

The result of the multiple regression (R) shows that there is significant correlation between the dependent variable – emotional maturity and the dimensions of school environment. Positive B values indicate significant relationship between emotional maturity and dimensions of school environment except acceptance. Except acceptance, all the predictors have significant t-values, those dimensions have a strong influence on emotional maturity. The β value for creative stimulation is greater than the other predictors, which implies that its impact is more. The high F-value indicates significant relationship between predictors and dependent variable. Results indicate that 32% of emotional maturity in high school students depends on the dimensions of school environment and the remaining 68% is due to variables other than the dimensions of school environment.

FINDINGS OF THE STUDY

There is significant influence of school environment and its dimensions such as creative stimulation, cognitive encouragement, permissiveness and physical school environment on emotional maturity of high school students. One of the dimension namely creative stimulation has more impact on emotional maturity of high school students.

EDUCATIONAL IMPLICATION OF THE STUDY

The impact of creative stimulation on emotional maturity of high school students is more in this study. Creative Stimulation refers to "teacher's activities to provide conditions and opportunities to stimulate creative thinking." Creative or innovative thinking is the kind of thinking that leads to new insights, novel approaches, fresh perspectives, whole new ways of understanding and conceiving of things. Imagination enhances our ability of expression which evolves more philosophical thought patterns. Also, imagination of something for a long time brings an emotional attachment to it. This drives the need to bring them to reality - either to realize one's dreams, or to share it with others, etc. - in essence catalysing the natural evolution of perception. The most important informal function of school is to develop the child emotionally. For this, the entire environment of school must be artistic. In other words, there should be garden, flower plants and other beautiful natural objects. The school building and the campus should be neat and clean. The walls of the room should be white washed annually and rooms be decorated tastefully. Trips, tours, exhibitions and debates also stimulate the emotional and aesthetic sense of children who can further be infused with a sense of admiration towards truth, beauty and goodness, the high ideals of human life.

CONCLUSION

Education can play an important role in balanced emotional development of the child. In fact school is the place after home which influence the emotional behavior of the child most. The healthy development of the child's emotions can take place only when the school environment and extracurricular activities are according to his emotions. The teacher can present good examples create desire to follow good ideals, contact suitable environment in order to develop desirable emotions and can prevent undesirable emotions from growing.

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Research Paper | Social Science

Health Status of Elderly in Rural Areas of Tamilnadu

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ABSTRACT

The increase in aging population raises concerns about the welfare and health status of the elderly. The study was conducted to identify the health status of the elderly people in rural area in Tuticorin and Ramnad districts of Tamilnadu. Descriptive research design was used for the study. 500 respondents (250 men and 250 women) who were 60 years and above age were interviewed. The data was analysed by using SPSS (Statistical Package for Social Sciences). The study found that more males are in good health status compared to female elderly respondents. Sex, religion, community, education, marital status, number of living children, type of family, family size and occupation of respondents have significant association with their health status. The finance and non availability of person to accompany the respondent to hospital are the reasons for not taking treatment. It is suggested to take measures to improve the economic conditions, community level supportive mechanisms and to establish geriatric wards in govt hospitals.

KEYWORDS : Elderly, rural, health, Tamilnadu

Introduction

A major demographic issue for India in the 21st century is population ageing, with wide implications for economy and society in general. With the rapid changes in demographic indicators over the last few decades, it is certain that India will move from being a young country to an old country over the next few decades. The increase in aging population raises concerns about the welfare and health status of the elderly. The elderly are vulnerable that they are having physical and mental health problems. Even now, old age is used as synonymous to ill-health. It denotes the vulnerability of elderly people in India. Elderly persons, by and large, are more vulnerable to multiple illness and disabilities because of decreased psychological reserves and compromised defense mechanisms. Moreover, the tendency of elderly to seek medical help goes on decreasing as the age advances. Even if they want to go to hospitals, they have issues in reaching the health facility and getting treatment. With this background, this paper highlights the health status of elderly in selected rural areas and its associated factors with an empirical data collected from villages of Tuticorin and Ramnad districts.

Objectives

- To identify the health status of the elderly people in rural areas
- To study the differentials and determinants of health status of the elderly persons with respect to gender, economic status and living arrangements.

Data and Methodology

Data for the present study was collected from 500 elderly persons (60 years and more) from Tuticorin and Ramnad districts as part of research study titled "A Study on Socio Economic Well Being of Elderly People in selected Rural Areas of Tamilnadu". Descriptive research design was used for the study. 40 panchayats from four blocks (two blocks in each district) were selected randomly. 500 samples (250 men and 250 women) were selected using simple random sampling method. Interview schedule was developed and used as a tool for data collection. A pilot study with 50 respondents and pre test was conducted with 20 respondents and.

Background Characteristics of the Elderly Person

Equal numbers of male and female respondents, 250 each, are the respondents. Three fourths belongs to Hindu and One fourth belongs to Christian. Muslims are in o.6 percent only. More males than females belong to Hindu. Majority of respondents belongs to backward class (90 percent) and the remaining 10 percent belongs to Scheduled caste / schedules tribes (SC/ST). More females than males belong to backward class. This pattern is reversed for SC/ST. A higher proportion of respondents (68.2 percent) are illiterates. 20.4 percent in 1-5 standard and 10 percent completed 6 and above standard of schooling indicating the low level of literacy rate of 31.8 percent. Literacy rate is higher for males (39.2 percent) than females (24.4 percent). Two fifth (40.2 percent) of respondents are living in nuclear family, 37 percent in joint family and 23 percent are living alone. Higher proportion of males is in nuclear family than females. Higher proportion of females is in joint family. More females than males (16 percent) are living alone indicate the disadvantage of old aged females in rural areas. A higher proportion of females (59.2 percent) are either housewife or unemployed that unemployed males (30.4 percent). Fishing (39.2 percent) is the major occupation of males who are employed. Self employment and business (27.2 percent) are the major economic activities of working old aged females.

Health status

The respondents were asked to rate their health the last year on three point scale 1.Good, 2.Fair, 3.Poor and 4.bedridden. The results are shown in ***Table 1***. Respondents reported that they are in good health (50.2 percent), at average (42.2 percent), poor (6.8 percent) and bed ridden (0.6 percent). More males are in good health status compared to female elderly respondents. The proportion of average and poor health condition is higher for females than males.

Table 1 Health Status of Respondents

Health Status	Male		Female		Total	
	No	%	No	%	No	%
Good	147	58.8	105	42	251	50.2
Average	95	38	116	46.4	211	42.2
Poor	7	2.8	27	10.8	34	6.8
Bed Ridden	1	0.4	2	0.8	3	0.6
Total	250	100	250	100	500	100

Regarding the health problems experienced by respondents, respondents reported Arthritis / joint pains (52.4 percent) more frequently followed by general weakness (25.8 percent). Blood pressure (29.4 percent), diabetes (26.4 percent), respiratory problem / Asthma (15.4 %) and dental problems (11.2 percent), nervous problems (7.6 percent), heart diseases (3 percent). Skin diseases (2.4 percent). Kidney problems (1.8 percent), T.B (0.6 percent) and paralysis or cancer (0.2 %) - ***Table 2*** A higher proportion of females than males experienced the health problems such as arthritis, general weakness, blood pressure and dental problems. Other health problems are at the level with not much difference between male and female respondents.

Table 2 Respondents by health problems

Health problems	Male (N=250)		Female (N=250)		Total (N=500)	
	Yes	No	Yes	No	Yes	No
Poor vision / eye impairment	61.6	38.4	65.2	34.8	63.4	36.6
Respiratory problem / Asthma	12.4	87.6	18.4	81.6	15.4	84.6
Skin diseases	2	98	2.8	97.2	2.4	97.6
Diabetes	26	74	26.8	73.2	26.4	73.6
Blood pressure	21.6	78.4	37.2	62.8	29.4	70.6
Paralysis	0.4	99.6	0	100	0.2	99.8
Heart diseases	2.4	97.6	3.6	96.4	3	97
Arthritis / Joint pains	44.4	55.6	60.4	39.6	52.4	47.6
Dental problems	7.2	92.8	15.2	84.8	11.2	88.8
Nervous disorders	6.4	93.6	8.8	91.2	7.6	92.4
Kidney problem	2.4	97.6	1.2	98.8	1.8	98.2
Cancer	0	100	0.4	99.6	0.2	99.8
TB	1.2	98.8	0	100	0.6	99.4
General weakness	17.2	82.8	34.4	65.6	25.8	74.2

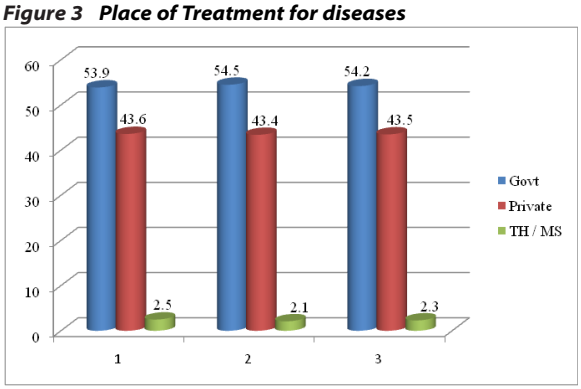
Treatment for health problem

Majority of respondents have taken treatment. 92.2% (473) of health problems among men and 91 % (624) of health problems among women were treated. The treatment seeking behaviors for health problems does not differ much between male and female respondents.

Place of treatment

The place of treatment for health problems of respondents is shown in Figure 3. More than half (54.2 %) of respondents used Govt health facilities for treating their health problems followed by private hospitals (43.5 %) and negligible proportion of respondents used the services of traditional healers and medical shops. The same pattern is found for both male and female respondents.

Figure 3 Place of Treatment for diseases

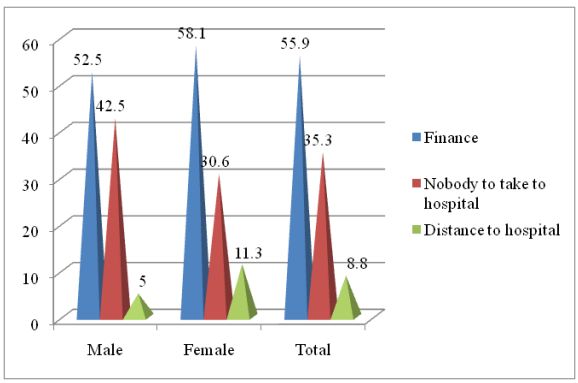


TH – Traditional Healers MS – Medical shop

Reason for not treating health problems

The reasons for not treating the health problems were asked. More than half of the respondents reported that finance (55.9 %) is the major problem for treating health problems. More than one third of respondents (35.3 %) reported that there is nobody to take them to hospital. Accessibility i.e distance to hospital (8.8 %) is the third next reason for not taking treatment for health problems. Generally finance problem and non availability of person to take respondent to hospital are the important reasons for not taking treatment for both male and female respondents.

Table 6 Reasons for not taking treatment



Conclusion and Policy Implications

This empirical study reveals that a higher proportion of males (58.8 %) than females (41.8 %) are in good health. There appears to be a clear gender inequality in health status of the elderly. Men tend to report "good health" at a higher extend than their women counterparts. The sex of respondents is significantly ($P < 0.01$) associated with the health status of respondents. This finding is matched with many earlier studies. Good health status is found in higher proportion for Hindus (59.5 %) than non- Hindus (23 %). Religion of respondents is significantly ($P < 0.01$) associated with the health status of respondents. The caste of respondents is found to be significantly ($P < 0.01$) associated with health status. SC/ST respondents reported good health condition in higher proportion (71.4 %) than backward caste (48%). Education of respondents is significantly ($P < 0.01$) associated with the health condition. The proportion of good health condition decreases as the level of education increases. The other factors may be responsible for this contradictory observation. The marital status of respondents is significantly associated ($P < 0.05$) with health status. The proportion of good health is higher for married (56.1 %) than others (44.7 %). The type of family is also significantly ($P < 0.01$) differentiates the health status. The proportion of respondents with good health is higher respondents in nuclear family (62 %) than single (52.6%) and joint family (36.1) family. The number of living children of respondents is significantly ($P < 0.01$) associated with health condition of respondents. The proportion of respondents with good health decreases as the number of living children increases. The family size of respondents is significantly associated with health status of respondents. The proportion of respondents with good health decreases as the family size increases. The occupation of respondents is significantly associated ($P < 0.01$) with the good health of respondents. The proportion of respondents in good health is higher for respondents working in fishing (78.8%) than that of other workers (29.9 %). Most of these findings are in line with some the studies carried out earlier in different settings of India. One of the studies conducted in Coimbatore, established that the association between all background characteristics of the elderly and their self reported health status are highly significant ($P<0.01$ or $P<0.01$) except in the case of current age. This study also reveals that health status differs by all characteristics of respondents.

Based on the findings of the study, it is suggested to provide livelihood opportunities to elderly through formation of cooperative societies / self help groups and improve their monthly income and to increase the amount under Old Age Pension scheme for leading a dignified life. Moreover, the elderly people suggested for OAP to all elderly irrespective of their economic status. More allocation should be made to cover all elderly in general and more vulnerable in particular, so that they get respect and importance in the family. Reserve fund may be created at panchayat level to meet the emergency medical needs of elderly people. A committee may be established to monitor the process. There should be community level supportive mechanisms to nurture the health needs of elderly people. The priority for elders should be given in hospitals by establishing geriatric wards. Elderly should be provided with awareness on healthy living so that the treatment seeking behaviours could be improved.

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Research Paper | Engineering

Ground Water Salinity Trend Analysis in Nag and Bhukhi Watersheds, Kachchh District, Gujarat.

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ABSTRACT

Analysis of ground water quality data over a period of 20 years is carried out to understand the trend of salinity variation for Nag and Bhukhi watersheds located in coastal region of Kachchh District, Gujarat. The study is specific reference to Lithology with the use of Remote Sensing (RS) and Geo-graphic Information System (GIS) techniques. The two watersheds were characterized based on observed changes in groundwater levels and salinity by using linear trends fit to well-monitoring data of 1994 to 2013 period for 13 observation wells. Ground water aquifer region having TDS values higher than 2500 ppm is identified as not utilizable for drinking, domestic, industrial and agriculture use. The total area having TDS value more than 2500 ppm is monitored to estimate the percent area extent changes over a period of time in GIS environment. Area above 2500 ppm in 1994 was 13.97% and it increase till 2010 and in 2010 it was 30.40%, but it is decrease to 5.65% in 2013.

KEYWORDS : Total Dissolved Solids (TDS), Water level below ground level, Lithology, Mundra region, Geo-graphic Information System (GIS) and Remote Sensing (RS).

INTRODUCTION

Wa ter is essential and one of the valued natural resources of this planet and groundwater is an important source of water supply throughout the world[1]. Water is a prime need for human survival and industrial development and ground water is also considered as the only source of drinking water in many rural and small communities[2]. Water is a very vital resource on earth gifted by nature and a very essential resource for any type of development worldwide. Water resource is available as surface water and groundwater resources[3]. Groundwater is most sustainable and reliable resource than surface water. Availability of groundwater depends on local hydro-geological condition[4]. Any type of economic development depends on land and water resource potential of the area. Here groundwater as water resource becomes more priority due to easy accessibility. The problems of arid regions' in terms of water resource availability and its potability need special attention[4]. Scanty rain and paucity of resource, water crisis always remain as main natural hazard for the any region. Kachchh located towards western side of Gujarat is an arid region characterized by water crisis and repetitive drought cycles. It has a very low potential of surface and potable groundwater resources. Hydro-geologically, Kachchh is bestowed with huge pile of sedimentary sequence. However, most of the geological formations are deposited in marine environment having inherent salinity. Therefore, availability of potable groundwater is highly restricted. Only Bhuj Formation sandstone of Cretaceous period has been deposited in fluvial environment. Along with this, Kankavati Formation sandstone of Tertiary age also provides good quality groundwater in coastal track of the district. These two aquifers are backbone for drinking and irrigation water supply. The overall resource potential of the region, mainly coastal resources becomes one of the most added attraction and ideal regions for industrial development. The study area had shared the maximum industrial investment amongst other regions of Kachchh. Along with industrialization, population and basic infrastructure have also grown. Resultantly, manifold increase in industrial and domestic water demands have put groundwater resource of the region under tremendous stress and also adversely affected long practiced agricultural industries of the region. Area being coastal region, over exploitation of groundwater has invited the threat of seawater intrusion in the aquifers having considerable environmental implications[10].

LOCATION OF THE STUDY AREA:

The study area is geographically extended from 22°42'00" to 23°12'00" north latitudes and 69°26'46" to 69°57'00" east longitude approximately. The parts of study area watersheds administratively fall in Bhujtaluka in the north, Anjartaluka in the northeast, Mandvitaluka in the west and by the Gulf of Kutch in the south. A system based model study is carried out for ***Nag (5H2B4)*** and ***Bhukhi (5H2B5)*** watershed comprising total 139 micro-watershed, 114 villages and covering 1547.79 km^2 area.

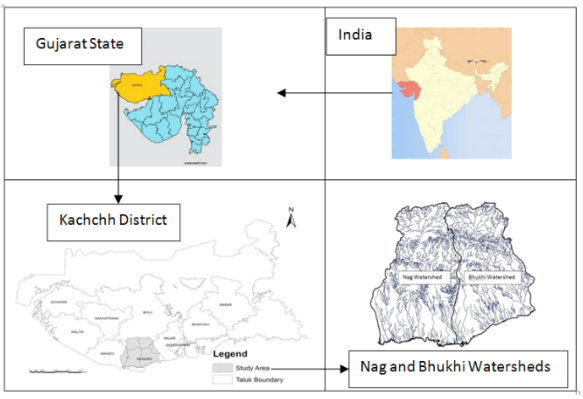


Figure 1: Location of the study area

OBJECTIVE OF THE STUDY:

The main objective of research is to carry out an in-depth study on analysis of ground water salinity trends in coastal region with specific reference to Lithology of Nag and Bhukhi Watersheds, Kachchh District, Gujarat.

SCOPE OF THE STUDY:

- Preparation, collection and compilation of various theme layers like Watershed Map and Lithological Map.
- Watershed characteristics through Analysis of theme layers.
- To study dynamics of Ground-water salinity and ground water levels in the spatial and temporal context with reference to Lithology and Geo-morphology using Remote Sensing and GIS techniques and available models.

DATA USED:

Multi-date remote sensing data corresponding to the Kharif, Rabi and Summer seasons are used for the study. The conventional data collected in the form of published maps, reports, charts, etc. from Central Government Organizations and state Government line Departments is also used for the study.

Satellite Data
IRS and LANDSAT data corresponding to Rabi, Kharif and Summer season for the period 1994 to 2014 is used for the study.

Collateral Data
- Village boundary maps, Taluka / Block maps and Settlement locations from District Administration.
- Watershed boundary map at 1:50,000 scale.
- Hydrological data mainly observation well information on ground water level quality fluctuation from Gujarat Water Resources Development Corporation (GWRDC) from 1994 to 2014.
- Published Geological and geological structures maps from Geological Survey of India and Oil and Natural Gas Commission.

THEME LAYERS PREPARATION
Watershed Map generation
The watershed map is prepared using the information on drainage and slope/elevation (Fig.2). The shape of watershed, area is a significant indicator for understanding the behavior of rainfall runoff and also the nature of geological control on the watershed. For the study purpose, the watersheds have been classified into five levels of hierarchy namely Region, Basin, Catchment, Sub-catchment and Watersheds as per the methodology given by the All India Soil And Land Use Survey (AIS&LUS) in the Watershed Atlas Of India [5].

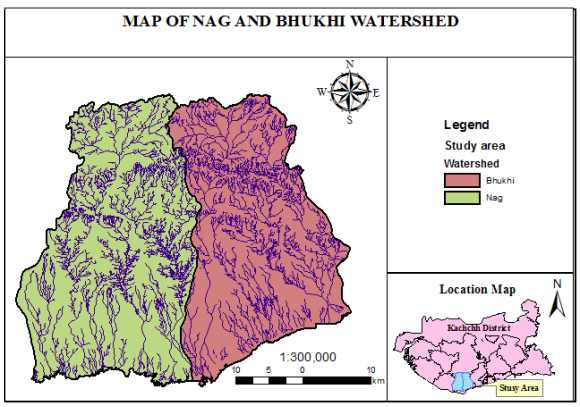


Figure 2: Watershed Map

Lithology Map generation
The lithological map is prepared using satellite data and available maps from Geological Survey of India (GSI) and Oil and Natural Gas Commission (ONGC) (Fig.3). The various litho units have been strati graphically identified with the available published maps and accordingly classified into litho-stratigraphic units. The available litho-stratigraphic boundaries obtained from published maps have been modified as per image signature at the micro level. As per the study, vesicular basalt is a dominant litho-stratigraphic unit occupying 40.16 percent of the study area followed by sand stones which occupy 39.79 percent of the study area. Other litho-stratigraphic unit occurring in the study area are Madh, recent clay, sandy clay occupying 20.05% of the study area.

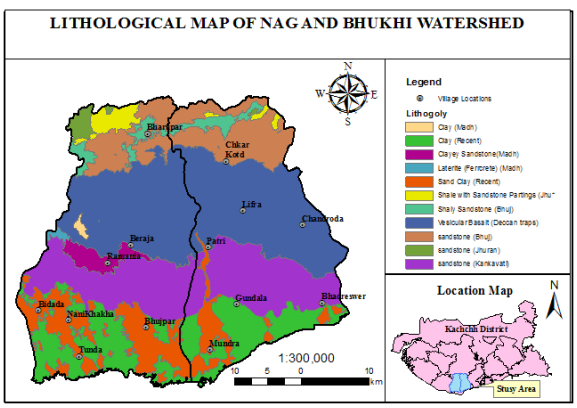


Figure 3: Lithology of the Nag and Bhukhi watershed.

GROUND WATER FLUCTUATION ANALYSIS
Groundwater fluctuation has been analyzed based on historic data collected from GWRDC over a period of 1994-2013. Secular change in water level fluctuation has been analyzed through isobaths map, hydrographs for all 13 locations of observation wells with reference to Lithology at 4 year interval.Average Groundwater levels in the area ranges from 9.9 m to 60.5 m below ground level. It is observed that ground-water level in the study area is declining at an average of about -1 m/yr. The average rate of decline of ground water level in Nag watershed is 15 m/year which is higher as compared to Bhukhi watershed having decline rate of 2.5 m/year.

Ground water level fluctuation hydrograph
- The well hydrographs of Bharapar and Chakar shows gradual increase in water levels. These villages are belong to Bhuj sandstone. It is has been established that the seasonal water level fluctuation is purely rainfall dependent.

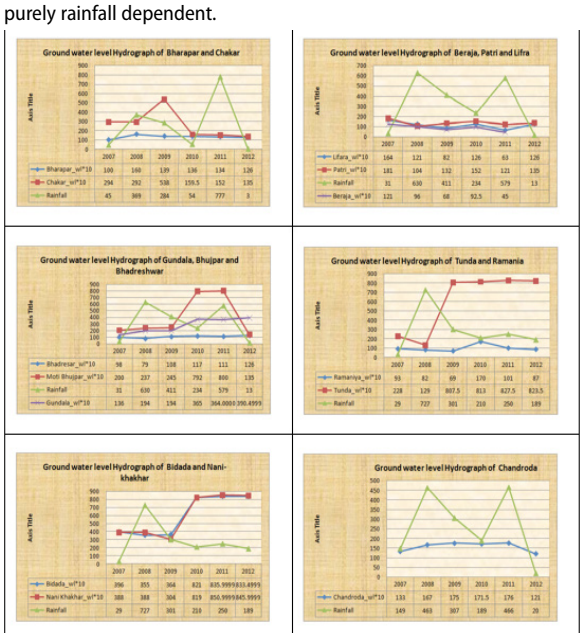


Figure 4: Ground water fluctuation Hydrograph

- The villages of Vesicular Basalt aquifer shows mixed order of fluctuation. Villages like Beraja, Patri and Lifra shows increase in water level on other side, Villages like Ramania and Chandroda shows decrease in first decade but in last decade show increase in water level.
- The hydrographs of Kankavati Sandstone are suggestive of groundwater depletion in spite of area observed high rainfall since year 2006. The observation wells situated in western part of the study area viz, Bhujpar, Tunda represent a case of over exploitation. Whereas, observation wells situated in eastern part like Bhdreshwar village show stability in water levels which, may be attributed to specific and perennial recharge conditions.

Ground water level Isohyets
- Hydro-isobath map (Fig.6) for phase (1994 – 2006) is the period prior to industrial development representing water demand in irrigation and domestic sectors. However this represented 12 years scenario display quite an alarming situation of lowering of water table in the study area. Although approximately 50% of the study area has witnessed rise in water table, remaining 50% study area has suffered from the problem of water table decline. Hydro-isobath map.

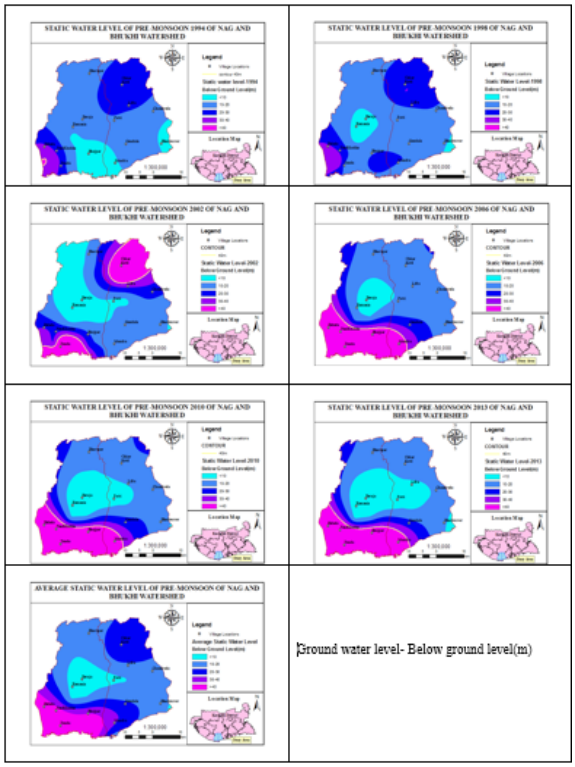


Figure 5: Ground water level Isohyets

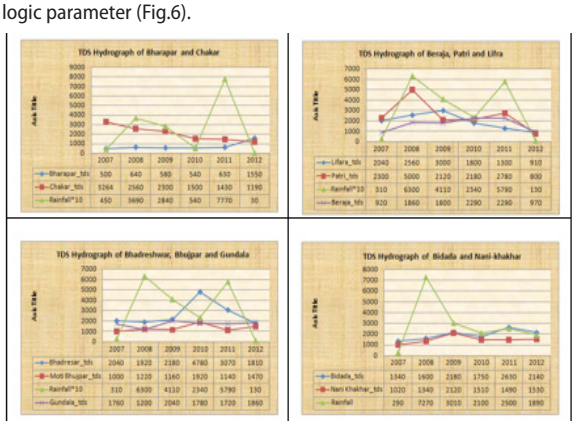
• Representing phase (2006-2013) demonstrate further deteriorating situation of groundwater storage. There has been a perceptible rise in all the categories pointing to lowering of groundwater levels. Even the area showing rise in water table for the period (1995-2005) has reduced significantly. This sharp decline particularly the categories >40 m depletion during 8 years i.e. (2006-2013) may be ascribed to rise in industrial and domestic demands as a part of industrial development in the study area.

GROUND WATER SALINITY ANALYSIS

Salinity trend in ground water has been analyzed based on historic data collected from GWRDC over a period of 1994-2013. Secular change in TDS has been analyzed through isobaths map, hydrographs for all 13 locations of observation wells with reference to Lithology. Ground water salinity in the Nag and Bhukhi Watersheds ranges from 740 ppm to 2740 ppm below ground level. The ground water salinity in the area is increasing on an average of about 27 ppm/year. The average TDS in Nag watershed located at western part is increasing at rate of 313 ppm/year and in Bhukhi watershed average rate of TDS is decreasing at a rate of 157 ppm/year, located at eastern part of the region.

Ground water salinity fluctuation hydrograph

Study through well hydrograph is considered to be the best technique to visualize the change in seasonal patterns of any hydro-geologic parameter (Fig.6).



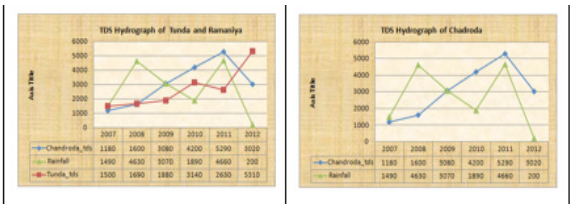


Figure 6: Ground water salinity hydrographs.

- TDS well hydrograph for Bhuj formation sandstone at Bharapar indicate stable to slight increase in TDS over a period of 15 years, but after 2010 it shows increasing trend. Observation wells at Chakar village, TDS concentration show marginal increase after 2006. But later there has been a bit decrease due to continual good rainfall in the study area after year 2010.
- Well hydrographs of basalt indicate high fluctuation in TDS content, but overall it is stable.
- Well hydrographs of kankavati formation sandstone show overall increasing trends. In western part, the observation wells at Tunda and Nani-khakhar villages show gradual increase. In eastern part, the observation wells at Bhadreshwar TDS content show decrease, but overall it is stable to slightly decrease in eastern part.
- Overall secular change in TDS from year 1994 to 2013 show most of the study area has suffered from ground water quality deterioration, where in the TDS has been rise between 740 ppm to 2740 ppm. This simply points to over exploitation of groundwater resources.

Ground water salinity Isohyets

Isobaths map considered to the most illustrative way to represent spatial changes over a large area. TDS Isobath maps for the study area have been prepared for pre monsoon seasons for the year 1994, 1998, 2002, 2006, 2010, 2013 (Fig.8). The hydro-Isobaths show drastic seasonal fluctuation in TDS range in coastal regions of the study area. Based on ground water uses and the relevant quality standards, i.e. drinking water and irrigation; TDS range classes and the respective spatial coverage is categorised.

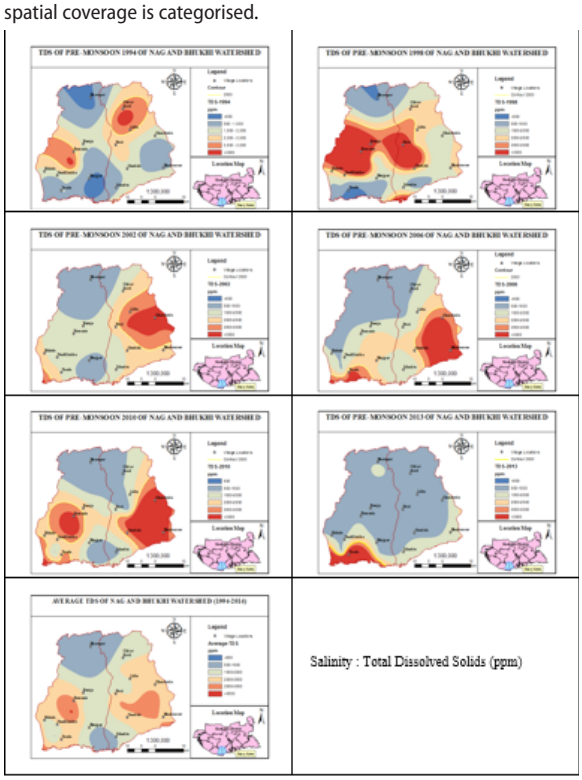


Figure 6: Ground water salinity Isohyets.

Based on derived isobaths patterns, TDS categorization and their specific aerial coverage have been computed. The temporal variation in the total area above and below cut off TDS of 2500 ppm within the study area is estimated using GIS (Table.1).

Table 1:
Area having TDS more than 2500 ppm

Sr.no	Year	% Area(km^2)	
		>2500 ppm	<2500 ppm
1	1994	13.97	86.03
2	1998	25.2	74.8
3	2002	17.93	82.07
4	2006	18.99	81.01
5	2010	30.4	69.6
6	2013	5.65	94.35

CONCLUSION

The average rainfall of the area for past twenty year (1994-2013) is 281 mm/year. The two watersheds were characterized based on observed changes in groundwater levels and salinity by using linear trends fit to well-monitoring data of 1994 to 2013 period for 13 observation wells. Ground water levels in the Nag and Bhukhi watershed, ranges from 9.9 m to 60.5 m below ground level. It is observed that ground-water level in the Nag and Bhukhi watershed is declining at an average of about 1 m/yr. The average rate of decline of ground water level in Nag watershed is 15 m/year which is higher as compared to Bhukhi watershed having decline rate of 2.5 m/year. Ground water salinity in the Nag and Bhukhi watershed, ranges from 740 ppm to 2740 ppm. The ground water salinity in the area is increasing on an average of about 27 ppm/year. The average TDS in Nag watershed is increasing at rate of 313 ppm/year and in Bhukhi watershed average rate of TDS is decreasing at a rate of 157 ppm/year. Total Dissolved Solids (TDS) is the primary indicator of salinity and very basic tool for analysis. Salinity vary with the lithology and Geo-morphology of the area. Behaviour of salinity study area is described as below:

Bhuj Sandstone:

The TDS of Bhuj Sandstone shows inverse correlation with rainfall pattern; with an increase in rainfall, TDS values decreases. By and large area occupied by Bhuj Sandstone show this trend except the Bhrapar, an average TDS is noticed.

Basalt:

The TDS hydrographs of weathered basalt aquifers also show good impact of rainfall input. TDS content show slight increase from year 2006 to 2010, but there has been a reduction in year 2013. Overall, the groundwater shows stable to slight improvement in water quality.

Kankavati Sandstone:

TDS of Kankavati sandstone aquifer have been prepared for northern and southern coastal parts of the study area. As mentioned above, TDS values indicate improvement in quality with the amount of rainfall increased. Hydrographs for observation wells situated in northern part of the aquifer show slight decrease in TDS however, the western most Khakhar village shows increase in TDS concentration. Hydrographs of observation wells situated in coastal region show stable to slight decrease in TDS around Mundra, whereas it show slight increase in western part around Bhujpar village and very much increase around Tunda Village. Villages located in eastern part of the coastal aquifer i.e. Bhadreshwar show a marked decrease in TDS over a period of 05 years.

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Research Paper Economics

An Empirical Research of The Ultimatum Game in India

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ABSTRACT

Traditional economics assumes a rational behavior. Bounded rationality suggests that humans may not always behave rationally. Instead of attempting to maximize their behavior they may at best behave in a 'satisficing' manner. Humans may also behave with an innate sense of fairness instead of behaving rationally. Güth, Schmittberger, and Schwarze (1982) developed a famous experiment called 'The Ultimatum Game'. The results of this experiment indicated that human decisions are not always based on bounded rationality, but at times is affected more by a sense of fairness. The current research analyzed the results for the experiment of the ultimatum game conducted with 30 pairs involving 60 people. The results confirmed that the behavior was affected by fairness more than rationality. The research also attempted to capture the underlying reasons for mentioned behavior. This research can be further extended to capture more complicated reactions towards repeated rounds of ultimatum games with different sets of rules.

KEYWORDS : ultimatum game, empirical study, fairness, reasons, India

INTRODUCTION

The economics literature for most part is based on the assumption that human beings behave rationally. However as the boundary within the social sciences get blur and the social scientists more generously borrow concepts across the subjects, new insights into human behavior are now researched. Hence economists also borrow the concepts from psychology in understanding and challenging the established concepts of economics. The concept of optimal decision making thus contrasted with the term 'satisficing behavior' that was first coined by Simon (1956). 'Satisficing' was derived by amalgamating two words 'satisfy' and 'suffice'. Simon was famed with conceptualizing the theory of bounded rationality that suggests that human behavior is not always rational. Güth, Schmittberger, and Schwarze (1982) developed a famous experiment called 'The Ultimatum Game'. The results of this experiment indicated that human decisions are not always based on bounded rationality, but at times is affected more by sense of fairness. Since then many researchers have performed this experiment as noted by Spiegel et al (1994).

Ultimatum game is a stylized representation of negotiation between two people with predetermined set of rules. The rules are communicated to the participants and the observations of the behavior are noted by the researcher. In the current research the ultimatum game is tested for people in India.

METHODOLOGY

The ultimatum game is a well-established experiment to check whether a human behaves as a rational being or he cares for a reasonably fair behavior.

The ultimatum game experiment in its original form is carried out in the following format. Two volunteersare selected for each trial of experiment. The volunteers are unknown to each other prior to the experiment. A coin is tossed to identify a decision maker in the experiment. Say if X and Y are the volunteers for the experiment, and if Y won the toss, Y would be the decision maker. Y is given an amount of Rs, 100. Then Y decides the amount that he would keepout of Rs, 100 as his share and the amount that he would offer to X. But before tossing the coin a rule is clarified that whatever offer is made by Y, if X did not agree on the share both would lose the whole amount. Thus the share that Y offers to X is to be accepted by X for both of them to keep their respective share. Alternatively if X chooses to disagree with the share proposed by Y none of them get any amount.

For the current research the ultimatum game experiment was repeated for thirty pairs of volunteers. Hence the experiment involved sixty volunteers in total. They belonged to the age group of 18-25. They were not known to each other. The rules were communicated before the experiment was performed every time. Then the experiment was performed and the results were noted. After the experiment both the volunteers were asked the reasons for their respective reaction. Since it was an open ended question, the variety of answers varied across the results. The experiment was conducted in Gandhidham city of Kachchh district in Gujarat, India.

FINDINGS

If humans were rational with a clear objective to maximize their wealth,all the deals should have been accepted at 99-1 offer since the one who lost the toss still had Re 1 as compared to having nothing before the experiment. Also he loses nothing but gains a Re 1 surplus by accepting the deal. Having known this the decision maker too should rationally keep Rs. 99 and give only Re. 1. But most of the time that the ultimatum game was performed by various researchers the player who loses the toss generally rejects the offer of Re. 1. Having estimated this result most of the time the toss winner offered a 50-50 deal or rather a 70-30 deal. The toss winner has most of the time tried to assure fairness in the deal instead of being rational.

The findings that resulted from performing the 'Ultimatum game' experiment 30 times with 60 volunteers have been displayed in the figure 1. Figure 1 shows the frequency of the number of pairs with the respective shares that the pairshad agreed upon. The red color shows that the offer was rejected and the deal could not complete and the blue color shows that the deal was accepted. Thus the first bar shows that in one pair the toss-winner suggested to keepRs. 90 and offered only Rs. 10 to the partner and the partner rejected the deal. Bar three shows that in 5 pairs the decision maker offered to keep with himself Rs. 70 and give away Rs. 30. Out of five pairs the deal got rejected for three pairs and was accepted by 2 pairs. As can be observed in the figure 1 a deal of 60-40 was opted by 9 out of 30 pairs and 8 pairs accepted the deal, Even a deal to keep and share 50-50 was offered and accepted by 7 pairs.

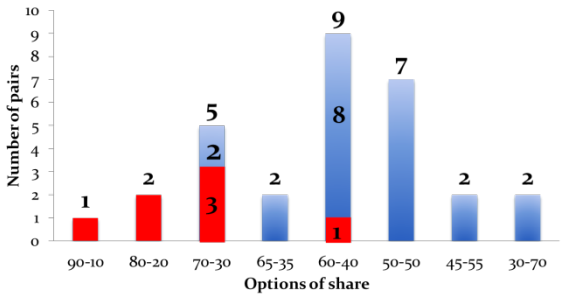

Figure 1: Number of pairs with the choice of respective shares agreed upon

Source: self-created by the author

ANALYSIS

The 90-10 deal: The deal was an offer made by the toss winner feeling that he deserved to keep more since he had won the toss. But the pairing partner rejected the offer as he found the offer to be too less for him to agree.

The 80-20 deal: The deal was offered by two pairs. One toss winner thought that since he had won the toss he had a right to keep far bigger share than the toss looser. The other toss winner wanted to take a risk of trying to offer a deal favoring him far more than the partner and so wanted to keep Rs. 80. In both the cases the partner rejected the deal since they both felt that the deal was not fair to them.

The 70-30 deal: The deal was offered by 5 pairs. The toss winners were largely fearful that the toss looser would reject anything less than 30 and they did not want to miss the opportunity to earn Rs. 70. So they decided to offer a deal that would not be rejected by the partner. Three of the partners rejected the deal since they thought that their share was too less. Two partners accepted the deal thinking that they had nothing to lose and instead they gained Rs.30. These two volunteers were not interested in comparing what they got with what the partner kept. Instead they saw their gain and thought it was not coming at any cost and so they should accept the deal.

The 65-35 deal: The deal was offered and accepted by 2 pairs. The toss winner did not want to lose the opportunity to earn anything without bothering much and so offered a fairer offer ofRs. 35 and kept with themselves Rs. 65. The toss loser too thought that the deal was reasonably fair and so accepted the deal.

The 60-40 deal: This deal had the highest frequency of 9 out of 30 pairs. 8 deals were accepted while one was rejected. Acceptance reasons remained the same that they just behaved in a fairer manner to assure that they did not lose the opportunity to get the money and the partnertoo accepted on the same grounds. The one who rejected suggested that he would rather wait to be offered the opportunity to decide the share rather than be a toss loser and on the receiving end of whatever was offered and so quit just as the deal was offered.

The 50-50 deal: This deal had a frequency of 7 out of 30 pairs and all were accepted by both the partners. The toss winner as well as the partner accepted this deal very promptly. They suggested that since this was an unexpected income, whatever was gained was a surplus to their expectations. So they should be fair by sharing the amount equally. The acceptance to this deal suggested a satisfaction for both the partners.

The 45-55 deal: In two pairs the toss winners offered to keep Rs. 45 himself and sacrifice Rs. 55 for her partner. These volunteers were fearful that they would lose the opportunity of getting the money. They wanted to offer a deal that the partner would not reject. The partner happily agreed to the deal since they got a larger share.

The 30-70 deal: There were two pairs in which the toss winners offered this deal. These toss winners doubted whether the partner would accept an unfair deal since they were unknown. They wanted to play it safe and so prompted the partner with a deal that he would readily accept. The partners were overwhelmed and immediately accepted the offer. The partners were prompt in accepting the deal since they feared that the toss winner might change his opinion.

Thus the experiment again substantiated the results observed by the previous researchers (Spiegel et al, 1994). Human behavior is guided more by an innate sense of fairness, the bounded rationality than a rational behavior.

CONCLUSION

Like most of the previous researches this experiment again proved that humans are *homo sapiens*as much as*homo economicus*. They tend to behave with fairness rather than rationally. This experiment undertaken in India again substantiated the results of theultimatum game experiment undertaken by the previous researchers. An analysis of such behavior and the underlying reasons of the behavior help the policy makers and business strategists in taking more informed decisions.

It is further a matter of inquiry that if the toss winner was allowed to keep the share that he proposed would he be rational? If the experiment was undertaken in two stages whereby the toss winner would first offer a deal and in the second stage if the partner is asked to offer awould the toss winner still behave the same? Such inquires may help behavioral economists understand the human behavior and thereby suggest policies and decide business strategies.

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Research Paper Economics

Gender Disparity: A Study of Education in India

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ABSTRACT

Literacy and education can play a pivotal role in reducing the socio-economic disparities. In a country like India where almost half of the population are females and if they do not access an equal opportunity to get literate and educated the nation is at a big socio-economic loss. It is in this context that the current research inquires if the disparity existed in literacy rates and at various levels of education. Using tools like literacy rates, enrolments, GER and GPI it could be observed that the disparity between females and males exist but is reducing. From 2005-06 to 2012-13 the disparity had largely reduced across all levels of education. Various policy initiatives have contributed in the improvement in parity in literacy and across education levels. However, continued and greater efforts would be imperative to ensure gender parity in education and thereby across all walks of life in India.

KEYWORDS : gender disparity, literacy rates, education, GPI, GER, India

INTRODUCTION

Historically certain sections in India have been disadvantaged for social, geographical and economic reasons. Similarly gender bias in favor of males may result in lesser opportunities for females to keep pace in participating in the socio-economic development of the nation. The sections of the society that have lagged behind on the path of development should have an equitable access to the tool of education to assure that they develop at an equal pace. Education is considered to be the alchemy for change. This is well realized by the apex regulatory body for education in India, the Ministry of Human Resource Development (MHRD). MHRD in it's Citizen's/Client's Charter of Department of School Education and Literacy mentions it's vision statement as "To ensure education of equitable quality for all to fully harness the nation's human potential" (http://mhrd.gov.in/sites/upload_files/mhrd/files/upload_document/CitizenCharter-SE-updated.pdf). In its Citizen's/Client's Charter of Department of Higher Education mentions its vision statement as "To realize India's human resource potential to its fullest in the higher education sector with equity and excellence"(http://mhrd.gov.in/sites/upload_files/mhrd/files/upload_document/CCC112014.pdf). Thus the commitment of the policy makers to ensure an equitable access to education for all could not have been overemphasized. An upward social ascent can be assisted through education. Education can play a crucial role in reducing disparity by allowing economic development of the females and thereby enhance her status in the society.

The current research paper is an attempt to study the gender disparity in literacy rates and various levels of education. It is an attempt to study the differences in enrolments of boys and girls and thereby understand the severity of the disparity in education in India.

METHODOLOGY

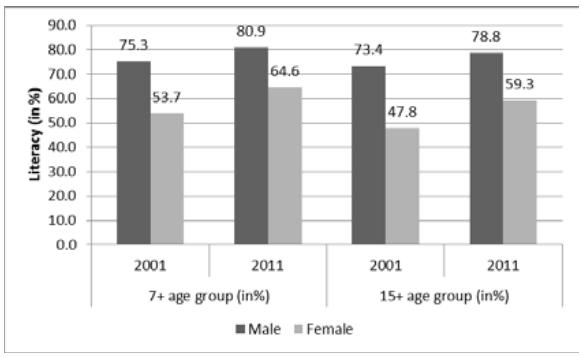
The current study is an analysis of enrolments at various levels of education based on the secondary data from a report released by the MHRD (2014). The study is undertaken for the period of 2005-06 to 2012-13 since a comparable data across all levels of education is available for this period over the last decade 2004-15. The data for 2012-13 were provisional. The analysis is undertaken for five stages of education, namely primary education (standard 1 to 5, age group 6-10 years), upper primary education (standard 6 to 8, age group 11-13 years), secondary education (standard 9 to 10, age group 14-15 years), senior secondary education (standard 11 to 12, age group 16-17 years) and higher education (all education after senior secondary education, age group 18-23 years) (MHRD, 2014). Literacy rates for boys and girls, Gross Enrolment Ratio for boys and girls and Gender Disparity Index are the tools used to analyze the disparity in education. They are defined as (i) Literacy Rate is the number of literates in the age group of 7 years and above expressed as percentage of the total corresponding population; (ii) Gross Enrolment Ratio is defined as the total student enrolment in a given level of education, regardless of age expressed as a percentage of the corresponding eligible official age group population in a given school year and (iii) Gender Parity Index (GPI) is the ratio of Girls GER to Boys GER in a given level of education.

FINDINGS AND ANALYSIS

Literacy rates in India have grown at a very slow pace over the decade 2001-11. It should however be considered that the rise in percentages of literates is with a huge

population base. The gap between the male and the female literacy had reduced over the period of 2001-11 for both the categories of above 7+ age group and above 15+ age group. As shown in figure 1 from 2001 to 2011 while the literacy rates in percentage for 7+ age group grew for both males (75.3 to 80.9) and females (53.7 to 64.6), the gap between the male and female literacy rates had also reduced from about 22% to about 16%. Similarly the literacy rates in percentage for 15+ age group grew for both males (73.4 to 78.8) and females (47.8 to 59.3), the gap between the male and female literacy rates had also reduced from about 26% to about 20%.

Figure 1: Literacy rates for males and females for 2001 and 2011 for the age group 7+ and 15+

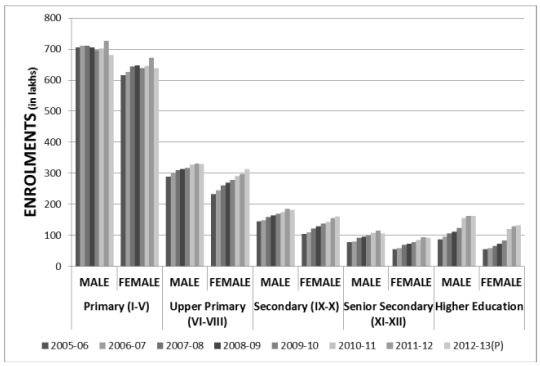


Source: MHRD (2014)

Thus for both the age groups the literacy rates had increased and the gender gaps between males and females had also reduced. If this trend continued or the reduction in the gap between the literacy rates of males and females narrosed with a greater speed it might contribute phenomenally towards the reduction in disparity and thereby positively affect the socio-economic fabric of the nation.

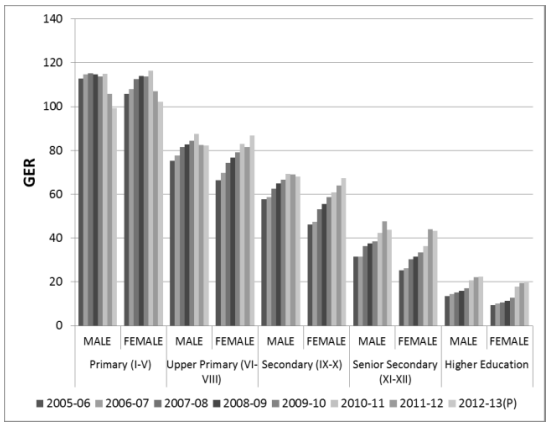
It could be largely observed that the total enrolments reduced from primary education to higher education for each year as shown in figure 2. The enrolments largely increased over the years from 2005-06 to 2012-13 for both males and females. But across all levels of education the gap between males and females persisted. While various policy initiatives are offered to females probably more policy efforts are needed to enhance the enrolments of education at all levels.

Figure 2: Enrolments in various levels of education from 2005-06 to 2012-13 (P) for males and females



Source: MHRD (2014)

Figure 3: GER at various levels of education from 2005-06 to 2012-13 (P) for males and females

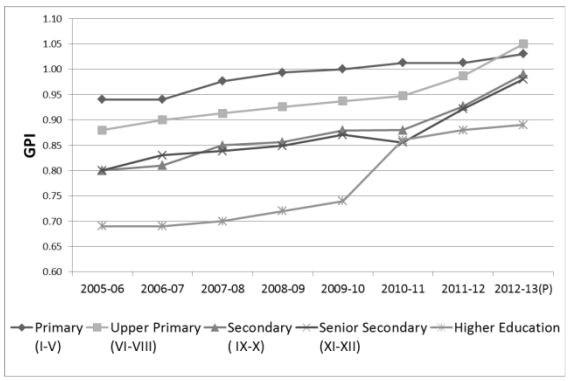


Source: MHRD (2014)

Figure 3 shows, that the GER for males and females almost showed a similar picture for the gender gap as was the case for enrolments. For primary education though since 2008-09 the GER for females exceeded that for males. For all the other levels of education from 2005-06 to 2012-13 (P) the gap between males and females GER continued to exist. But for 2012-13 either

the gap between the enrolments of males and females across various levels of education narrowed down or the GER for females exceeded that for males. While it should be noted that the data for 2012-13 was provisional and final data may help understand the scenario better. Nevertheless largely the gaps between males and females have reduced for all levels of education for 2005-06 to 2012-13 (P).

Figure 4: GPI at various levels of education from 2005-06 to 2012-13 (P) for males and females



Source: MHRD (2014)

A GPI of 1 indicates parity between sexes, i.e. if the GER of males and females at a certain level of education would be same, the GPI would settle at 1, indicating a perfect balance between genders. Above 1 GPI would indicate that a higher proportion of eligible age group females are enrolled as compared to their male counterparts. As can be observed in figure 4 the GPI had increased from 2005-06 to 2012-13 for all levels of education and got closer to 1. Particularly the rise in the GPI for upper primary, secondary and higher education was at a greater pace. In 2009-10 particularly in higher education the enrollments of females saw a sudden upsurge and the GPI showed a rise of about 0.1 in a year itself. Overall the trend in the GPI showed that the scenario had improved in context of enrolments of girls from 2005-06 to 2012-13 across all levels of education. While this is praise worthy, the GPI above one was only noticed for primary and upper primary levels of education. For the other levels the GER for males was higher than the GER for females since the GPI was less than one.

CONCLUSION

The incorporation of greater participation by the fairer sex, the females, in the process of inducing changes in social, cultural, institutional and economic conditions of the nation is necessitated. In a country like India where almost half of its population is females, one cannot afford to ignore the possibilities of increasing the pace of economic development by providing education facilities to females. Instead if this opportunity is lost almost half of the population would lack opportunity to participate and contribute in the economic growth of the nation.

An equitable development of the nation can be ensured if the economy invested higher investments towards the provision of education of females. Time cannot be riper than now for an increased consciousness and sensitivity amongst the policy makers. They should pursue the goal of increased access to education for females with greater commitments. Moreover there are also ethical and normative arguments in support of increasing the opportunity of access to education for females.

In India some of the initiatives to enhance gender parity are already being implemented like highly subsidized higher education, community based aids to girl child to support for fees and providing other resources for pursuing studies, girls colleges and universities, lodging & boarding facilities, sexual harassment cells, etc. Besides there are also many schemes as mentioned below that are regularly funded by the government. They include:

1. Day care centers in Universities and Colleges
2. Indira Gandhi Scholarships for single girl child for pursuing Higher and Technical education
3. Construction of Women's hostels for colleges
4. Development of Women's studies in Universities and colleges
5. Capacity building in women managers in Higher Education
6. Post doctoral fellowships for women
7. Women hostels in polytechnics
8. IGNOU's motivation for women/girls learning (MHRD, 2011-12)

There is also a 'Sexual Harassment of Women at Work Place Cell' to avoid any kind of sexual harassment at work place against women. This ensures a safe work culture that can further motivate the female enrolment in education (UGC, 2010-11).

Such policy initiatives amongst others have contributed for a higher participation of females in education. Continued efforts would surely ensure gender parity in literacy and education that would further enhance the development of the nation.

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Research Paper | Psychology

Life Satisfaction and Adjustment Among Married and Unmarried Women

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ABSTRACT

The present study examined the life satisfaction and adjustment among married and unmarried women. The sample for the study consisted of 30 married women and 30 unmarried women. Simple random sampling procedure was used for the study. The sample was administered the Life satisfaction scale and Bell's Adult Adjustment Inventory. The obtained data were organized for statistical analysis. The descriptive 't' test of statistical significance and Pearson's Product Moment correlation were used for analysis of data. The difference between married and unmarried women was found to be negligible in life satisfaction and adjustment. Both married and unmarried women were found to have high level of life satisfaction and average adjustment. There was also no significant relationship between life satisfaction and adjustment among married and unmarried women.

KEYWORDS : Life Satisfaction, Adjustment, Married, Unmarried Women

Introduction:

Satisfaction is a Latin word that means to make or do enough. Satisfaction with one's life implies contentment with or acceptance of one's life circumstances, or the fulfilment of one's wants and needs for one's life as a whole.

Life satisfaction is a measure of well-being which represents how satisfied people feel with their life generally, as contrasted with positive affect (sometimes called just 'happiness'), which represents how they feel at a single point in time. That is, life satisfaction involves people thinking about their life as a whole, including factors such as whether they are achieving their goals, are doing as well as other people around them, and are happy generally rather than just right now. Life satisfaction is thus a longer-term measure than affect. Life satisfaction refers to the feelings of contentment and happiness which a person has towards his/her life. It has been reported to be one of the three primary components, viz satisfaction, pleasant affect and low level of unpleasant affect of subjective well-being. Satisfaction can be divided into various domains of life such as recreation, love, marriage, friendship and so forth and these domains can further be sub-divided into various facets.

Life satisfaction is an overall assessment of feelings and attitudes about one's life at a particular point in time ranging from negative to positive. It is one of three major indicators of well-being: life satisfaction, positive affect, and negative affect (Diener, 1984).

Adjustment refers to the behavioral process of balancing conflicting needs or needs against obstacles in the environment. Adjustment can be defined as a process of altering one's behavior to reach a harmonious relationship with the environment. Adjustment disorder occurs when there is an inability to make a normal adjustment to some need or stress in the environment.

Need for the present study:

The present study is based on the Life satisfaction and Adjustment among married and unmarried women. Life satisfaction and adjustment are important to find out if there is any relationship between these variables and marital status. Earlier, it was believed that a woman has better life satisfaction and adjustment when she is married and takes up responsibilities as a wife, and later as a mother. Attitude towards marriage has now changed, and women have started believing that they are better off, satisfied, happier and are capable of making decisions better when they are independent. They also believe that they are better adjusted when they are alone and responsible for their own actions rather than when they have to deal with a family. So in the present context where women are educated and oriented towards careers, it is essential to study the life satisfaction and adjustment of married and unmarried women because of change in family structure and ideas towards marriage and life.

Objective of the study:

The objective of the study was to find the difference in life satisfaction and adjustment among married and unmarried women. The study also aimed at finding out if there was any relationship between life satisfaction and adjustment. Based on the objectives, certain null hypotheses were framed.

Hypotheses:

- **There is no significant difference in Life Satisfaction among married and unmarried women.**
- **There is no significant difference in Adjustment among married and unmarried women.**
- **There is no significant relationship between Life satisfaction and Adjustment among married women.**
- **There is no significant relationship between Life satisfaction and Adjustment among unmarried women.**

Review of Literature:

Natalie Ebin Bloch, Jennifer Campion et al (1999) studied the life satisfaction and stresses of single women in midlife on sixty single women 35 to 65 years old, previously married or never married. They were interviewed about the satisfactions and stresses of the single status. Respondents were categorized as having high, medium, or low life satisfaction. Life satisfaction was found to be significantly correlated to such factors as good health, not being lonely, living with a female housemate, having many casual friends, and being invested in work. Half the women mentioned having sexual needs, which were or were not fulfilled. The other half stated that they did not have sexual needs. These two groups did not differ in life satisfaction. Regrets about not having had children occurred in one-quarter of the childless women, without necessarily implying low life satisfaction. Only 15% of the entire sample had low life satisfaction, a percentage similar to that found in the general population.

Patricia Frazier et al (2008) studied the desire for marriage and life satisfaction among unmarried women. The purpose of this study was to examine factors that may underlie current marriage trends. A community sample of 217 unmarried women aged over 30 years were surveyed regarding their reasons for being single, desire for marriage and life satisfaction. Results suggest that unmarried women attribute being single to both barriers and choices. Mediational analyses suggest that unmarried women have more desire for marriage because they have less social support and they have and lower life satisfaction because of lowered self-esteem.

Womer (2009) et al studied the personal and social adjustment of the Never-married women by employing chiefly the California Test of Personality. This study compared the personal and social adjustment of 38 never-married women and 38 married mothers. Certain contemporary stereotypes picturing the never-married woman as deficient in

personal and social adjustment and insisting that marriage and motherhood are essential to feminine fulfillment were not supported. The two groups in this study exhibited a comparable adjustment pattern, both scoring above the average on norms provided for the California Test of Personality. It was deduced that, through creative contribution to society, a never-married woman may achieve a satisfactory adjustment to life and that, though denied a husband and children, she may nonetheless experience adequate personality fulfillment.

Research Design:
Correlational analysis design.

Variables:
Independent variable: Marital status.

Dependent variable: Scores obtained on Life Satisfaction and Adjustment.

Sample:
A total of 60 women (30 married, 30 unmarried) of the age 23-35 years from an urban population were selected using random sampling procedure.

Tests:
Life Satisfaction Scale:
The Life Satisfaction Scale was developed by Promila Singh and Joseph to assess an individual's level of satisfaction in life. The scale consists of 35 statements and was constructed considering five dimensions of life – i.e. pleasure in everyday activity, life meaningfulness, positive image, optimistic outlook and achieving goals. The subject may mark the responses to each item on a five point rating as "Always", "Often", "Sometimes", "Seldom (Rarely)" and "Never" scored as 5, 4,3,2,1 respectively. Scores earned by the subject on every marked item are added together to yield a total score. Higher the score, higher is the level of life satisfaction. Likewise, lower the score, lower is the life satisfaction. The maximum score on Life Satisfaction is 175.

Reliability:
The test-retest reliability computed after a lapse of 8 weeks turned out to be 0.91.

Validity:
Co-effeicients of correlation between the scores of the present scale and Life satisfaction scale by Alam and Singh(1971) was computed. The co-efficient of correlation was found to be 0.83. The scale also possesses face and content validity since each item was judged by experts**.**

Bell's Adjustment Inventory:
The Bell's Adjustment Inventory developed by Hugh.M.Bell, Consulting Psychologists Press Inc, Palo Alto, California. The Adult form of the adjustment inventory provides five separate measures of adjustment on home, health, social, emotional and occupational areas.

Reliability :
The co-efficients of reliability for each of the five sections and for its total score are reported by correlating the odd-even items and applying the Spearman- Brown prophecy formula. The co-efficients of reliability was 0.91 for Home adjustment, 0.81 for Health Adjustment, 0.88 for Social adjustment, 0.91 for Emotional adjustment, 0.85 for Occupational adjustment and 0.94 for the total adjustment.

Validity:
The inventory has been validated in two ways. First, the items for each of the section in the inventory were selected in terms of the degree to which they differentiated between the upper and lower fifteen percent of the individuals in a distribution of adult scores. Only those items which clearly differentiated between these extreme groups are included in the present form of the Inventory.

Second, the inventory has been validated through the selection of "Very well" and "Very poorly" adjusted groups of individuals by specialists in adult counseling and a determination of the degree to which the inventory differentiates among them.

Procedure:
In order to collect data for the research, the married and unmarried women were contacted personally to get their consent to participate in the study. With their consent, the purpose of the study was briefed and rapport was established. Their biographical information was obtained in the data sheet prepared for the purpose which contained their age, education, marital status etc. Ethical issues like confidentiality of information and convenience of subjects for data collection were strictly followed for the collection of data. Finally, the participants were informed of the choice to withdraw themselves from the research at any point during the responding period. Subsequently, the Life Satisfaction Scale and Bell's Adult Adjustment Inventory were administered as per standard directions to measure level of satisfaction and adjustment. After the participants finished responding, the questionnaires were collected back and the subjects were thanked for their participation and co-operation.

Results and Discussion:
Table 1
Mean SD and 't' value of married and unmarried women on Life Satisfaction Scale

	MARRIED		UNMARRIED		't'value
	MEAN	SD	MEAN	SD	
Life Satisfaction	143.73	12.94	141.27	16.31	0.65 NS

NS: Not significant

An examination of table 1 shows that married and unmarried women do not differ significantly on Life Satisfaction. The obtained 't' value of 0.65 is statistically not significant, thus accepting the null hypothesis which states that " There is no significant difference in life satisfaction among married and unmarried women."

Table 2
Mean SD and 't' value of married and unmarried women on Bell's Adjustment Inventory

AREAS OF ADJUSTMENT	MARRIED		UNMARRIED		't'value
	MEAN	SD	MEAN	SD	
Home	7.8	5.78	6.07	5.69	1.17 NS
Health	8.03	5.28	7.33	4.79	0.54 NS
Social	13.2	5.08	13.33	5.34	0.0962 NS
Emotional	11.77	6.04	10.4	7.27	0.79 NS
Occupational	7.96	4.89	6.7	4.47	1.05 NS
Total Adjustment	48.77	18.98	43.8	22.59	0.92 NS

NS: Not significant

An observation of table 2 reveals that married and unmarried women do not differ significantly on adjustment. The 't' values on all areas of adjustment were found to be insignificant, thus proving the hypothesis which states "There is no significant difference in adjustment among married and unmarried women.

Table 3
Pearson's product moment correlation between life satisfaction and adjustment among married women

Adjustment	Life Satisfaction
Home	0.32 NS

Health	0.45 NS
Social	-0.43 NS
Emotional	-0.19 NS
Occupational	0.48 NS
Total Adjustment	0.59 NS

NS: Not significant

An examination of table 3 reveals insignificant correlation co-efficients between all areas of Adjustment and Life Satisfaction among married women, thus proving the hypothesis which states "There is no significant relationship between Life Satisfaction and Adjustment among married women"

Table 4
Pearson's product moment correlation between life satisfaction and adjustment among unmarried women

Adjustment	Life Satisfaction
Home	0.0086 NS
Health	0.026 NS
Social	0.043 NS
Emotional	0.038 NS
Occupational	0.019 NS
Total Adjustment	0.03 NS

NS: Not significant

An observation of table 4 reveals insignificant correlation co-efficients between Life satisfaction and Adjustment among unmarried women, thus proving the hypothesis which states "There is no significant relationship between life satisfaction and adjustment among unmarried women."

Findings:
1. There is no significant difference in life satisfaction and adjustment among married and unmarried women.
2. There is no significant relationship between life satisfaction and adjustment among both married and unmarried women.

Scope for further study:
1. The study can be conducted on married and unmarried males.
2. Different socio economic status and socio cultural background can be included to study how they affect life satisfaction and adjustment.
3. The study can be conducted on married and unmarried women of a different age group.

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Research Paper | Management

Consumer Buying Behaviour Towards News Paper in Bardoli City

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ABSTRACT

A newspaper is a regularly scheduled publication containing news of current events, informative articles, diverse features and advertising. It usually is printed on relatively inexpensive, low-grade paper such as newsprint. General-interest newspapers typically publish stories on local and national political events and personalities, crime, business, entertainment, society and sports. Most traditional papers also feature an editorial page containing editorials written by an editor and columns that express the personal opinions of writers. The newspaper is typically funded by paid subscriptions and advertising. By using rank analysis, this paper highlights the factor considered by the customers to shape their preference for Newspaper. Further, the study evaluates the customers buying behavior subscription decision for a particular media companies, and gives a guideline to the media companies to increase their subscriber base.

KEYWORDS : Newspaper, Media Companies, Subscriber Buying behavior

INTRODUCTION:

The fast advance of television a few decades ago and the Internet in the last decade has changed people's media consumption patterns. Different media are in a continuous time battle with each other. This is also true for news media. The traditional medium, like a newspaper is, is put into an underdog position. This development earns more detailed research, especially among the future generation. This research has its focus on young adult's newspaper reading.

The Indian Media and entertainment industry stood at Rs584 bn in 2008, a growth of 12.4% over the previous year. Over the next five years, the industry is projected to grow at a CAGR (compound annual growth rate) of 12.5% to reach the size of Rs1052 bn by 2013, says a FICCI & KPMG report on the sector release. The report however, highlights that the market environment has become increasingly challenging for the sector, on the back of economic slowdown and the consequent slowdown in advertising revenues, especially in the last quarter of 2008. Sectors like TV, Print, Radio and Outdoor which depend on advertising revenues were largely affected and this is estimated to continue into the current year too. Advertising spends grew at CAGR of 17.1% in the past three years. Going forward, it is expected to exhibit a robust growth rate at CAGR of 12.4% over the next five years. Potential upsides could take this higher. Growing acceptance of the digital TV distribution technology, entry of DTH players the success of many small budget movies, and the rising competition in the regional market were some of the key highlights of the previous year. Rajesh Jain, Head Information, Communication & Entertainment, KPMG India said, "Media companies are under pressure to change, innovate and re-examine their existing business models. Players need to draw upon new capabilities to survive in this environment. In the immediate future, media corporate is likely to focus more on operating margins, and assess opportunities for consolidation, while building on core strengths."

RESEARCH OBJECTIVES

1. To know the buying behavior of people towards news paper in Bardoli region.
2. To study consumer view regarding the newspaper.
3. To know customers preference regarding news paper.
4. To study the factors considered by consumer while purchasing the news paper.

RESEARCH METHODOLOGY:

Research Design

I have selected Exploratory & Descriptive research design.

Data Collection

The data collection was done in two phase. In 1st phase, secondary data was collected from reference books and other web sites, So as to get information about the media (print) industry. In 2nd phase the primary data collected through survey. The Questionnaire has been used to gather data.

Data Analysis

After a careful data collection from survey, the separating the data according to need and then feed on to excel sheet. These data are plotted on different chart for comparison. Different finding were derived out of it.

SAMPLING PLANS:

- ***Sampling Design:*** **Here convenience sampling has been used.**
- ***Sampling Size:*** **The sample size is 100 respondents.**
- ***Sampling Unit:*** **The sampling unit comprises the consumer of news paper across all age groups in Bardoli.**

Limitation

1. **There seemed resistance and reluctance to accurate information from the respondent due to their inherent fear.**
2. **The data given by the consumer may be bias.**
3. **We have only 100 samples for survey so it is not convenient for us to measure to consumer behavior of respondents.**

DATA ANALYSIS

Percentage analysis

➢ **Usefulness of newspapers in the modern era of electronic media**

To improve reading skill	10
To improve vocabulary	16
Increase Knowledge	74
Other	0

Interpretation:

From above chart, we can say that 10% of respondents are read the newspaper for improve their reading skill, while 74% respondents are use newspaper for increase knowledge and 16% use newspaper for improving their vocabulary skill. So we can see that most of people use newspaper for improves knowledge.

➢ **Different newspaper subscriber**

Divya Bhasker	24
Gujarat Samachar	30
Gujaratmitra	16
Sandesh	30
Others	0

Interpretation:

From above chart, we can observe that most of respondents read Gujratsamachar and Sandesh, 24% respondets read Divyabhasker and 16% respondents are read Gujratmitra.

➢ **Factor(s) consider while reading the newspaper.**

	1	2	3	4	5	6	7	8	9	Aver-age	Rank
Simple language	8	6	24	6	24	4	14	8	6	5.822	7
No.of. pages	9	6	4	24	16	20	7	8	6	4.77	8
Quality of paper	21	18	14	13	20	8	6	0	0	7.322	4
Credibil-ity	21	22	8	6	23	12	4	4	0	7.11	5
Column	40	30	0	0	10	5	5	0	0	7.611	2
Printing	12	42	18	5	7	4	5	3	4	7.511	3
Colour pages	8	18	11	17	21	18	7	0	0	6.644	6
Quality of content	45	30	15	8	2	0	0	0	0	8.87	1
Editorial	2	8	7	5	15	29	11	11	12	4.22	9

Interpretation:
From the above rank test, we can say that most of the people read newspaper for good quality of content, because of they give first rank to purchase news paper which provide good quality of content and people will give second rank to those newspaper which writes, no. of column in newspaper, and then give more preference to good print design in the news paper.

In our survey, we observe that people read newspaper for increase their knowledge and improve reading skill, so that they give first preference to quality content and good printing. Some respondents give some preference to simple language for read newspaper.

➢ **Reason for subscribe/purchase particular newspaper**

Less Price	4
Good Scheme	26
Good quality	44
Good content	26
Distribution Channel	0
Others	0

Interpretation:
From the above chart we can see that 44% respondents purchase newspaper because of good quality and 26% read the newspaper because of the content, 26% respondents purchase news paper because of the schem provided by newspaper, 4% respondents purchase because of less price.

➢ **Like the most in this newspaper**

Business news	2
Local news	4
National news	14
Sport page	40
Supplements (Purti)	34
Column	6
Others	00

Interpretation:
From the above chart we can see that, we can observe that, 40% respondent's family member like to read sport pages, 34 % respondent's family member like to read supplements, 14% respondent's family member like to read national news, 6% respondent's family member like to read column, 4% respondent's family member like to read local news, 2% respondent's family member like to read business news.

FINDINGS

1. Most of the respondents read Sandesh and Gujarat Samachar.
2. 74% respondents are read the news paper for increasing their knowledge.
3. Most of the respondents read the Sandesh and Gujarat Samachar because of their good quality of content.44% respondents subscribe the newspaper for the quality of content.
4. 76% respondents are influence by the word of mouth of other user.
5. Most of the respondents are interested in reading national news in the newspaper.
6. Younger people are mostly interested in reading the sport news in newspaper rather other news.
7. Most of women respondents like the supplements and column.
8. Gujarat Samachar has highest market share in Bardoli.

CONCLUSION

The present study clearly points to the fact that most of subscriber of news paper read Sandesh and Gujarat Samachar for increasing their knowledge. The second part of the study reveals the role of quality of news paper, in present study find that quality of content is very important factor for newspaper subscriber. Subscriber most liked to read in newspaper sport page and supplements, so news media focus on that content and quality of news paper.

SUGGESTION

1. The news paper manufacturer should concentrate more on national news.
2. The news paper manufacturer should concentrate on sport news also.
3. Quality of the Printing is the most important aspect, so use good quality paper.
4. Maintain the good quality of content.
5. Get the feedback continuously from the customer and know what they want to read in newspaper.
6. Newspaper Company should improve the printing, quality of content, no. of pages, increase different schemes, etc.
7. Company should do some extra creative activities that can win the trust among the people.
8. Develop the the distribution channels.

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Research Paper | Medical Science

Anaesthetic Management of Patient with Bombay Blood Group Posted for Elective Resection of Ovarian Mass

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ABSTRACT *Bombay blood group is genetically inherited condition due to absence of fucosyl transferase enzyme. Bombay blood group also known as Oh phenotype: h/h in which no H antigen is present on RBC membrane. So this patient will not have A and B antigen, but will have anti A, anti B and anti H antibody in their blood. They can not receive any of the blood unit from any of ABO blood group. Here we present anaesthetic management in patient with Bombay blood group posted for elective resection of ovarian tumor under general anaesthesia and epidural analgesia.*

KEYWORDS : Bombay blood group, Ovarian tumor resection , Anesthetic management.

INTRODUCTION

The Bombay blood group, is a rare blood type also known as the h/h blood group. This blood phenotype was first discovered in Bombay, in India, by Dr. Y. M. Bhende in 1952 so known as Bombay blood group. It occurs in four per million in the world and one per 10000 in certain places in bombay. All RBC will have H antigen except bombay blood group. This H substance is biochemically produced by the binding of fucose to the surface glycoprotiens and this process is catalysed by Fucosyl transferase. If N acetyl galactosamine binds to the H substance it forms the blood group A, If galactose binds to it, it will form blood group B. Absence of any binding substance to H produces the O blood group. Up till now no references are availble for anaesthetic management in major surgery in such patient. Here we discuss anaesthetic management insuch case.[1,2,3]

CASE REPORT

A 65 kg 60 yr old female of ASA grade II was posted for elective removal of ovarian mass. Patient had c/o abdominal distension since last three month. Patient had h/o hysterectomy five years and after diagnosis of O+ve blood group she had received O+ve at that time. But within few minutes she had severe anaphylactic reaction and so blood transfusion was stopped. In our institute she was diagnosed as bombay blood group when presented for elective laparotomy.

Patient was known case of hypertension since one and half year and taking Tab Amlodipine 5 mg and Tab Telmisartan 40 mg. All other investigations were within normal limit.

She was premedicated with Tab Lorazepam 0.5 mg at night before surgery and Tab Diazepam 2.5 mg and Tab Amlodipine 5 mg, Tab Telmisartan 40 mg on morning of surgery at 6 am. Epidural catheter was placed at L2-L3 space preoperatively. With Standard monitoring, her preoperative BP was 130/90 mm of hg, pulse 84/min, SPO_2 was 99%. Before induction of anaesthesia one unit of autologus blood was tapped. After giving Inj Glycopyrrolate 0.2 mg, Inj Ondansetron 4 mg IV , anaesthesia was induced with Inj Fentanyl 100 µgm, Inj thiopentone sodium 350 mg and Inj Vecuronium 6.0 mg. Trachea was intubated with 8.00 mm cuffed portex endotracheal tube. Mechnical ventilation was established using Drager Fabius plus and maintained throughout the procedure. Anaesthesia was maintained with O_2, N_2O and 1 MAC of Isoflurane and Inj Vecuronium. Immediate after induction of anaesthesia epidural injection bupivacaine 0.125% , 10 ml was given to provide premtive analgesia and also to establish induce hypotension. surgery lasted for 3 hrs. Total blood loss was 1000ml. All three blood were trnsfused without any complications. Neuromuscular blockade was reversed with 0.4 mg Inj Glycopyrrolate and Inj Neostigmine 3.5 mg. Patient was extubated after full recovery from anaesthesia. Post operative analgesia was provided with Inj bupivacaine 0.125% 10 ml with inj tramadol 50 mg epidurally twice in a day. Patient was kept under observation in ICU for one day then shifted to ward.

DISCUSSION

Bombay blood group is inherited condition when there is point mutation in FUT 1 locus. At least one functioning copy of FUT 1 need to be present for H antigen to be produced on RBC. Classical Bombay caused by Tyr 316 Ter mutation in FUT 1. Mutation introduce stop codon that leads to truncated enzyme that lacks 50 aminoacids at C terminal end. SO enzyme will be inactive[2,3]

Individuals with the rare Bombay phenotype (hh) do not express H antigen which is present in blood group O. So they cannot make A antigen or B antigen on their red blood cells, because A antigen and B antigen are made from H antigen. So they can donate RBCs to any member of the ABO blood group system (unless some other blood factor gene, such as Rhesus, is incompatible), but they cannot receive blood from any member of the ABO blood group system as they always contains one or more of A and B and H antigens, but only from other people who have Bombay phenotype[1].

As in case patient's Hb was low, surgery was postponed for one and half month due to unavailability of blood. During that period patient was advised to started Tab Iron to build up her Hb. By that time two units of bombay blood group were arrenged from pune.

On the privious day of surgery patient's CBC showed, her Hb was 11.3gm, so one unit of autologus blood was tapped in Operation room preoperatively. Thus we had kept 3 units of blood ready, as heavy blood loss during surgery was expected by gynecologist.

During cell grouping or routine grouping bombay blood group would be categorised as O blood group they wouldn't show any reaction to anti A, anti B antibody just like O blood group. As in our patient during privious surgery, she was transfused with O positive blood group and had anaphylatic reaction with few ml of O positive Blood group. When cross matching with different blood bags of O group was done than it had showed cross reactivity or incompatibility. So reverse grouping or serum grouping has to be performed to detect the bom-

bay blood group.

Epidural catheter was also placed to adopt hypotensive tecnique to reduce blood loss[4]. Epidural injection of local anaesthetic agent provide excelent perioperative analgesia. Moreover it is one of the method of induce hypotension during surgery[5] . We kept systolic blood pressure 80-90 mm hg and mean blood pressure between 55-65mm of mg throughout the surgery to minimise blood loss.

CONCLUSION

As the bombay blood group is rare blood group, Hb status should be build up to acceptable level to tackle blood loss during surgery. Adequte amount of same type of blood group should be kept ready as this patient can not receive any other type of blood group. Also anaesthetic technique should be such that it minimize bloob loss.

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Research Paper | Physical Education

Impact of Specific Speed and Agility Training on Dribbling Ability and Defensive Movement of Male Basketball Players

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ABSTRACT

The purpose of the study was to find out the impact of specific speed and agility training on dribbling ability and defensive movement of male basketball players. For this purpose, thirty male basketball players were randomly selected as subjects. The age of the subjects were ranged between 15 to 17 years. They were divided into two equal groups and each group consisted of 15 subjects. Group I underwent specific speed and agility training for three days per week for twelve weeks and group II acted as control. The dribbling ability and defensive movement were selected as criterion variables. The specific speed and agility training was selected as independent variable. The dribbling ability and defensive movement were assessed by control dribble test and defensive movement test respectively. All the subjects of two groups were tested on selected dependent variables at prior to and immediately after the training programme. The analysis of covariance (ANCOVA) was used to analyze the significant difference, if any among the groups. The .05 level of confidence was fixed as the level of significance to test the "F" ratio obtained by the analysis of covariance, which was considered as an appropriate. The results of the study showed that the specific speed and agility training had significantly improved the dribbling ability and defensive movement of male basketball players.

KEYWORDS : Specific Speed and Agility Training, Dribbling Ability and Defensive Movemen

Introduction

Basketball is played by both men and women of all ages and fitness level. Successful game of basketball needs ability of the players to generate good speed, agility and tremendous power during the play of game. Skills like dribbling, shooting and passing are of utmost importance for a player at any level of play. Not merely skills but also physical and physiological characteristic of a player will contribute to the success of the player as well as of the team **(Yograj Thani, 1997).** It is the fastest–growing sport in the world for many reasons. Basketball is a team game, individual execution of fundamental skills is essential for team success **(Hal Wissel, 2012)**. The skills required of today's players are incredibly different than those of yesterday. Basketball now allows for individual athletes to exhibit physical aptitude within the context of an offense or defense. The attributes of speed, change of direction and power rule the game **(Donald A. Chu, 2013)**.

Speed and agility training is crucial for basketball to improve skills as well as improve fitness. Speed and agility training is also key in decreasing injury for basketball players. Increasing interest in basketball in the world requires from specialists to continuously discover new means and methods in working with basketball players. The complexity and sensitivity of training of basketball players are undeniable; hence, the scientific and professional approaches are very important in developing the process and controlling the effects of training **(Magma, 2009).** Basketball is an extremely dynamic sport that requires movements in multiple planes of motion as well as rapid transitions from jogging to sprinting to jumping. The ability to quickly elude defenders, rapidly decelerate to take a jump shot, or explosively jump up to grab a rebound are all skills required to effectively play the sport. It is equally important for the athlete to be able to perform these skills in a variety of directions and in a controlled manner to ensure injuries do not ensue. Due to the myriad of physical demands that come with the sport makes speed and agility training a crucial component to incorporate into basketball training program (**Scott Lucett, 2013).**

Methods

Subjects

Thirty male basketball players were selected as subjects at random. The age of the subjects were ranged between 15 to 17 years. They were divided into two equal groups and each group consisted of 15 subjects. Group-I underwent specific speed and agility training for three days per week for twelve weeks and Group-II acted as control who did not participate any special training apart from the regular curricular activities.

Variables

The dribbling ability and defensive movement were selected as criterion variables. The specific speed and agility training was selected as independent variable. The dribbling ability and defensive movement were assessed by control dribble test and defensive movement test respectively.

Training Programme

During the training period, the experimental group (Group-I) underwent (n = 15) specific speed and agility training for three days per week (alternative days) for twelve weeks and subjects in Group II as control were instructed not to participate in any strenuous physical exercise and specific training throughout the training programme apart from the regular curricular activities. Everyday the workout lasted for 30 to 45 minutes approximately including warming up and warming down periods. The subjects underwent the respective programmes as per the schedules under the supervision of the investigator. Each training session was conducted only in the morning time. Specific speed and agility training was performed three days per week for twelve weeks.

Speed and Agility Drills for Basketball

Speed can be defined as the amount of velocity a person has in any given direction **(Enoka, 2002).** This refers to how fast someone can run in a forward directed, straight path of motion. Speed is the straight-ahead velocity of a person or how fast a person can run forward. Speed drills would include those in which the athlete is required to run in a linear path. Speed drills for a basketball player would include:

(i) 10-in-1 Drill (sprint from one baseline to the opposite baseline and back to the original baseline, repeating five times for a total of 10 lengths of the court) (1-2 sets, 60 seconds rest between / within sets)
(ii) 30-yard sprint: acceleration and maximal speed
(iii) ¾-court sprint (sprint from the baseline at one end of the court to the free throw line on the opposite end of the court).

Agility is the ability to start (accelerate), stop (decelerate and stabilize), and quickly change direction while maintaining proper postural alignment **(Parsons & Jones, 1998).** This requires high levels of neuromuscular efficiency (movement coordination) because the athlete is constantly regaining their center of gravity over their base of support while changing directions at various speeds. All of these elements are very common in basketball and will be important to train for. Agility drills for basketball include:

(i) Pro-lane Agility Drill (sprint around cones following the below pattern).
(ii) Agility Ladder Drills - One –ins, Two-ins, Out-Out- in-in (3 sets of each drill and rest 30 seconds).
(iii) T-Drill - sprint around cones following the patterns (4 sets and 30 seconds rest b /w sets).

These drills are designed to help improve deceleration capabilities, change in direction and foot work skills required for basketball. Both the speed and agility drills can be performed on the court. Care should be taken when performing agility ladder drills on a basketball court to ensure the athlete does not slip on the ladder due to the slick floor surface.

Statistical Procedures

All the subjects of two groups were tested on selected dependent variables at prior to and immediately after the training programme. The analysis of covariance (ANCOVA) was used to analyze the significant difference if any, between the groups on each selected criterion variables separately. In all the cases, .05 level of confidence was fixed to test the significance, which was considered as an appropriate.

Results

It is clear from Table - 1 that there is no significant difference between specific speed and agility training group and control group on dribbling ability and defensive movement before commencement of training, as obtained *F* ratio of 0.89 and 0.12 are less than the required table value of 4.20 at 0.05 for the df of 1 and 28. It denotes that the random assignment of subjects for the two groups is successful; however initial difference is not elicited in dribbling ability and defensive movement.

Table - 1
ANCOVA on Dribbling Ability and Defensive Movement

Variables	Testing Conditions	Specific Speed and Agility Training Group	Control Group	SOV	SS	df	MS	'F' Ratio
Dribbling Ability (Sec)	Pre (M ± SD)	15.79 ± 1.51	16.39 ± 1.83	B	2.69	1	2.69	0.89
				W	84.32	28	3.01	
	Post (M ± SD)	14.49 ± 0.999	16.30 ± 1.92	B	23.36	1	23.36	9.13*
				W	71.73	28	2.56	
	Adjusted (M)	14.74	16.05	B	31.36	1	31.36	10.02*
				W	84.39	27	3.13	
Defensive Movement (Sec)	Pre (M ± SD)	20.36 ± 0.89	20.47 ± 0.87	B	0.10	1	0.10	0.12
				W	23.16	28	0.83	
	Post (M ± SD)	18.97 ± 18.97	20.26 ± 0.78	B	12.33	1	12.33	19.89*
				W	17.35	28	0.62	
	Adjusted (M)	19.02	20.22	B	10.74	1	10.74	51.14*
				W	5.65	27	0.21	

*Significant at 0.05 level of confidence

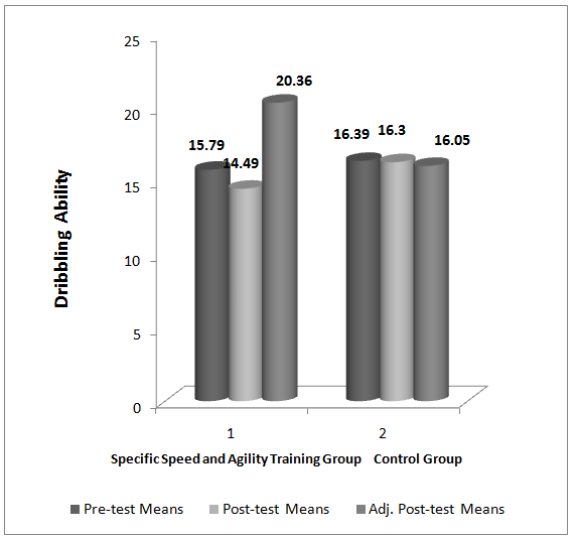
Table - 1 also reveals that there is a significant difference on dribbling ability and defensive movement during post test. The obtained *F* ratio of 9.13 and 19.89 are greater than the required table value of 4.20 at 0.05 for the df of 1 and 28. Thereby it infers that the dribbling ability and defensive movement found to change significantly before and after twelve weeks of training.

Further, Table - 1 clearly shows that dribbling ability and defensive movement differ between the groups after adjusting the pre test scores, as obtained *F* ratio of 10.02 and 51.14 are greater than the required table value of 4.21 at 0.05 for the df of 1 and 27, indicating that after adjusting pre-test scores, there was a significant difference between the two groups on adjusted post test scores on dribbling ability and defensive movement. Thus, it is concluded that twelve weeks of specific speed and agility training significantly increased both dribbling ability and defensive movement.

Discussion

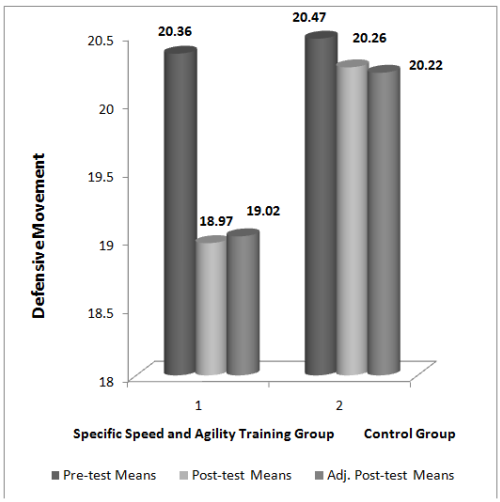
In the present study, twelve weeks specific speed and agility training significantly increased dribbling ability and defensive movement are presented in Figure 1 & 2.

Figure - 1
Mean Values of Specific Speed and Agility Training Group and Control Group on Dribbling Ability



Skill-based conditioning games offer a specific training stimulus to stimulate the physiological demands of competition and combination training and skill-based conditioning games is likely to confer the greatest improvements in fitness and skill in junior elite players **(Santos, Ejam and Janeira, 2012).** Subjects setting specific goals performed significantly better on defensive footwork, ball handling drills and dribbling drills **(Burton, Damon, 1989).** A supervised training program improved skill based athletic performance such as acceleration, speed, coordination, dynamic balance, agility, lateral movement and explosive power **(Dean et al., 1998).** The specific basketball training program was significantly improved the physical variables and skill performance of basketball players **(Parimalam and Pushparajan, 2013)**. The sports-specific training program could improve neuromuscular and performance indices in high school basketball players **(Noyes et al., 2012)**. These findings support the theory that a 10-week intensive combined training program performed on university women basketball players had a significant effect on improving their physical, physiological, biomotor, and skill- technical features **(Kilinç, F.,2008)**.

Figure - 2
Mean Values of Specific Speed and Agility Training Group and Control Group on Defensive Movement



Conclusions

The game of basketball needs sudden burst of speed, unexpected stops, jumps, turns, changes in direction and pace with and without the ball, in response to the direct action of the opponent. All fundamental skills in basketball namely dribbling, passing & receiving, shooting, rebounding and defensive movements need a sound specific speed and agility to achieve high level performance. Studies have proved that the ability to use the proper specific speed and agility drills has the greater impact in performing defense, rebounding, handling the ball or moving in to different offensive and defensive positions. Hence, it was concluded from the results of the study, that twelve week basketball specific speed and agility protocol is efficient enough to improve dribbling ability and defensive movement.

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Research Paper | Medical Science

Ovarian Hyperstimulation Syndrome an Unusual Case After Embryo Transplant

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KEYWORDS :

INTRODUCTION

OVARIAN HYPERSTIMULATION SYNDROME (OHSS) IS A RELATIVELY COMMON COMPLICATION OF OVARIAN STIMULATION AND CAN BE LIFE THREATENING.It is an iatrogenic complication of assisted reproductive technology.The syndrome is characterized by cystic enlargement of ova and the fluid shift from the intravascular space to the third space.[1].The patho-physiology of OHSS is characterized by, increased capillary permeability, leading to leakage of fluid from the vascular compartment , with third space fluid accumulation and intravascular dehydration.The increased intra-abdominal pressure indicated thatOHSS may be considered a compartment syndrome[2].Today, due to aggressive treatment protocols including the development of invitro fertilization and cryopreservation with the goal of obtaining sufficient number of oocyes and embryos, an increased risk of developing OHSS is present.

CASE REPORT

A 36 years old female, came to NIMS Medical College with known case of primary infertility (inability to conceive even after repeated IUI and oral ovulation induction drugs)with husband semen analysis normal.Patient attended IVF centre and was advised for induction of ovulation after following investigation

INVESTIGATION:Patient was investigated with her HB-13.2 gm% , blood group –B +ve , rest complete blood profile within normal limits. RBS- 73 mg/dl, HIV, HBsAG, VDRL, HCV nonreactive. Her LFT , RFT ,BT, CT within normal limits.All her hormonal profiles were normal wherein her AMH- 8.9 ng/ml ,FSH-3.38 mIU/ml, LH-1.54mIU/ml , TSH-2.2ng/ml, PRL-7ng/ml.

On Diagnostic Hystero –Laproscopy , her uterus and adnexa were normal and chromopertubation test negative showing bilateral tubal blockage.

After going through detailed history ,patient was counseled and advised for IVF. She was then taken for long protocol step down for induction, with recombinant FSH and followed by recombinant HMG. Her E2 on day 2 of stimulation was <20pg/ml progesterone -0.9ng/ml, on day 5 E2- 21.6 pg/ml, on day 8 E2- 461 pg/ml . On day 10 patient had 8 follicles of 18mm on right and left side and rest four were small in both the ovaries measuring around 16mm with E2 of >2000pg/ml. Decision to give trigger with recombinant HCG was taken and ovum pick up was planned after 35 hours. On ovum pick up, 10/10 follicles were retrieved , all were M2. The patient was given prophylactic infusion of albumin and cabergolin was started to prevent OHSS.

On the day of transferher ovaries were bulky, hence patient was explained and counseled about OHSS,and two blastocysts were transferred considering her age.Patient was discharged on request after three days due to some personal reasons.

After four days patient came with chief complain of pain in abdomen, distension of abdomen.On USG, there was moderate ascitis with ovarian enlargement. Patient was admitted in MICU, strictly monitored for vitals, daily input output, abdominal girth charting,USG and serum creatinine. Proper fluid management with adequate input output, albumin infusion given, all luteal phase support medications were stopped.Patient became apparatly alright ten days after admission and discharged.

CONCLUSION: OHSS can be thought of, as the loss of control over hyperstimulation of the ovaries. Although the prevalence of the severe form of OHSS is small , it is important to remember that OHSS is usually an iatrogenic complication of a non vital treatment that has the potential for a fatal outcome.

DISCUSSION:

Ovarian hyperstimulation syndrome (OHSS) is a rare complication of ovulation induction therapy. The syndrome was first described in 1941 and first fatal case of OHSS with renal failure and death was described in 1951.familial cases of recurrent OHSS are seen in person with mutation in follicle stimulating hormone (FSH) receptors. [4].

Etiopathogenesis

Invitro fertilization techniques use GnRH agonist or antagonist and gonadotropin to stimulate the ovary. Following stimulation, human chorionic gonadotrophin is used to initiate ovulation and maintain luteal phase. These agents,alone or together produce a state of increased capillary permeability which is a hallmark of OHSS. Serum VEGF levels correlate with severity of OHSS .[5,6]

Clinical Features: Symptoms usually begin with sensation of bloating , abdominal discomfort, nausea, vomiting.As disease progress accumulation of fluid in third space leads to ascitis, pleural and pericardial effusion, oligouria, haemoconcentration, hypovolemia and electrolyte imbalance.[7,8,9]

Laboratory data is characterized by ,haemoconcentration >45%, and raised WBC and PCV[9]. Electrolyte disturbances in the form of hypernatremia and hyperkalemia may be seen. Abnormal liver function test are seen in 30 % of patients in OHSS.[10]. Hypoalbuminemia is universal. Raised serum creatinine points to severe OHSS . low levels of IgA & IgG are seen in patients with severe OHSS and predisposes to infection.[11]. The plasma levels of rennin, aldosterone, noradrenaline,antidiuretic hormone(ADH) and ANP are increased.[9,11]. Urinary sodium concentration is low in most patients. Ascitic fluid study reveals high protein and low cell counts.[11].

Complications:

Pulmonary complication of OHSS include hydrothorax, pulmonary embolism, ARDS, pulmonary edema, atelactasis and intra alveolar haemmorage [5].

Pleural effusion develops in approximately 20% of severe OHSS. Usually bilateral.[5]

Thromboembolism is common in OHSS due to high estrogen, haemoconcentration, reduce circulating blood volume and thrombocytosis. [12,13]

High incidence of infection is attributed to decreased IgG and IgA levels. Most common cause of fever is urinanry tract infection. Seen in 20.5% patient.

The causative organisms isolated includes klebseilla pneumonia, proteus merabillis, ecoli, pseudomonas areginosa, and proteus vulgaris. [14].

Classification:
Mild OHSS
GRADE I – abdominal distension and discomfort
GRADE II- grade I plus nausea , vomiting or diarrhea plus ovarian enlargement from 5 -12 cm .
MODERATE OHSS
GRADE III- features of mild OHSS plus USG evidence of ascites.\
SEVERE OHSS
GRADE IV- features of moderate OHSS plus clinical evidence of ascites and hydrothorax and breathing difficulties.

GRADE V- all of the above plus a change in blood volume , increased viscosity due to haemoconcentration, coagulation abnormalities and diminished renal perfusion. [15]

Management:
There is no specific treatment for OHSS . therapy is manily supportive.

The syndrome is self limiting and resolution parallels default in HCG levels.

Mild cases can be managed on out patient basis with daily meassurment of weight, urinary output, avoidance of stranious activity and sexual intercourse.

Oral fluid intake should be monitored. Patient should have serial meassurments of haematocrit , electrolytes and creatinine. [16,17,18]

Moderate OHSS usually subsides with bed rest for 2-3 weeks. [16]

Severe OHSS should be managed as in patient. Haemodynamic and respiratory status should be assessed, physical examination to rule out venous thrombosis should be done. And iv line ideally subclavian catheter should be placed to measure central venous pressure. [16]. Patient should be monitored daily with haematocrit, total count, electrolytes, LFT, RFT[16,19,20]

Ultrasound abdomen is done to measure the size of ovaries and ascites.

A chest radiograph after shielding the uterus should be done. Along with blood gas analysis and oxygen saturation. In case of respiratory failure endotracheal intubation and mechanical ventilaton may be required. [19,20]

In patient with haematocrit > 45% or hypoalbuminemia less than 30 gm/lt. or ascites, human albumin is the plasma expander of choice. Once sufficient volume expansion has been achieved and haematocrit is less than 36%, furosamide should be given to acess renal function. [16,19,21].

In severe cases of OHSS prophylactic anticoagulation should be used.

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Understanding Models Necessary to Treat Disability Issues

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ABSTRACT

Working for the disabled is a herculean task and requires relevant models to enhance intervention. Models are needed to guarantee efficient and effective services to the disabled. It is no gainsaying that models of disability provide insight into people's attitudes, perceptions and prejudices on disability and how these impact on the wellbeing of the disabled. Essentially, models reveal the extent to which the society provides access to work, education, economic empowerment and others to the disabled. Basically, two philosophies govern the use of models in working for the disabled. The first philosophy sees disabled people as dependent upon the society. The philosophy encourages paternalism, segregation and discrimination. The second philosophy perceives disability as consequences of negative attitudes of society. This philosophy advocates preference, empowerment, equality of human rights, and integration. The study aimed to examine extent to which each philosophy influences the use of models in treating disability issues as well as note the more frequently used models.

KEYWORDS : paternalism, disability, models, human rights

Introduction:

Studies suggest that there are about 500 million disabled people in the world population and out of this, 80 percent of them live in the developing world (Swain & French 2004). The main causes of the impairments include poverty, inadequate sanitation, malnutrition, poor water supply, and more recently HIV and AIDS. Researchers have successfully used several models to study the disabled. Models of Disability are tools developed to define impairment and strategies to meet the needs of disabled persons. Researchers like Altman, (2001), Asch, (2006) and Johnson,(2003) believe that providing services to the disabled without a model is incomplete and will encourage narrow thinking and lack of detailed guidance in the use of interventions that benefit the disabled. Models are useful framework that assist health workers to understand disability issues, and interventions to alleviate the problems of disabled persons.

Studies by Engel, (1977), Goodley, (2001), Zola, (1989), and Shakespeare, (2006) suggest that models should not be seen as exclusive options where one will be termed as superior or replacing the other. The development and popularity of each model should be seen as a continuum for changing social attitudes toward disability. However, models change as society changes. Disabled people spend countless hours learning to walk or talk at the expense of their education and leisure (Oliver 1996). With this understanding, the objective of working for the disabled is to develop and operate a cluster of models that are capable of empowering them with full and equal rights as others in the society.

For this study, the models to be considered will include: The medical model of disability, the social model of disability, the professional model of disability, the tragedy and/or charity model of disability, the moral model of disability, and others. Efforts will be made to present the practical applications of each model in health service interventions.

Methodology:

Information gathered in this study was through extensive literature review.

The Medical Model of Disability:

The *medical model* is regarded as an individual model of disability, a part of the disease process, an abnormality, and an unfortunate individual tragedy that happens on random basis. Studies have shown that the most dominant model of disability is the *individual mode* which assumes that the difficulties disabled people experience are as a result of their physical, sensory, or intellectual impairments (Oliver & Sapey 2006). The medical model believes that problems must be overcome by the individual's efforts since the problems reside within the individual (French 2004). In this model, if the blind person falls down as a result of the obstacle in the room he or she does so because he or she cannot see the obstacle. Also if a person with motor impairment fails to move into a building he or she does so because of his or her inability to walk. Here problems are viewed as inherent *in* the individual. Barnes and Mercer (1996) argue that the individual model of disability should focus exclusively on attempts to modify people's impairments and return them to "normal." Therefore, that the effects of the physical, attitudinal, and social environments of the disabled people should be regarded as fixed. This thinking has kept disabled people in disadvantaged state because of their inability to address their problems in the society (Oliver & Sapey 2006).

Because the medical model of disability views disability as the problem of an individual caused by disease, trauma, or other health conditions, sustained medical care to be provided by health care professionals constitutes the main intervention needed. The main objective is to enhance the management of disability by providing a "cure." This means providing the individual with adjustment and behavioral changes that would lead to "almost-cure" or effective cure. At the political level, the response is geared towards modifying or reforming healthcare policy that would benefit the disabled. Using the medical model and viewing disability as an individual problem show that if someone has impairments such as visual, mobility or hearing impairments, the person's inability to see, walk or hear is understood as the disability. This is why the medical model is sometimes regarded as the 'personal tragedy model because the model regards the way in which the body is shaped as responsible for the difficulties people with impairments experience.

In medical model , disability is regarded as a result of an individual's physical or mental limitations which is unconnected to the social or geographical environments of the individual. This is why disability is referred to as "Biological-Inferiority" or" Functional-Limitation". Using this model, the World Health Organisation (WHO 1980) differentiated between impairment, disability and handicap. Impairment is termed as loss of the psychological, physiological or anatomical structure or function, while disability is restriction or lack, resulting from impairment which gives rise to inability to perform an activity in the manner or within the range considered normal for a human being. Handicap is ***a*** disadvantage resulting from an impairment or disability that prevents a person's fulfillment of a normal role by age, sex, social and cultural factors. This definition of handicap, according to Gliedman, and Roth, (1980), is at variance with the belief of the disabled people. The disabled people believe that in the absence of cure for physical conditions, that the impairment must be lived with. It follows from this that any negative interaction between the disabled and the non-disabled must be overcome by restructuring the social and physical environments. Therefore, WHO in relating the consequences of diseases describes issues of disability by emphasizing the experiences of individuals with particular impairments in their social and physical environments. This is why compensatory services are exclusively provided to people with impairments just to compensate them for the malfunctioning of their bodies. This contributes to the common view of the disabled that their problems stem from malfunctioning bodies. And as such,

that their impairments automatically prevent them from taking part in social activities. This thinking is part of what makes the disabled

not to challenge their exclusion from mainstream society (Darke, 2004, Swain, and Sally 2004, Oliver, & Sapey 2006).

In the Medical Model, the first step to a solution is to find a cure or - to make the disabled "normal" (WHO,1980). Studies have shown that mere treatment alone cannot solve the problem of disability but rather, to accept the "abnormality" and seek the necessary care and support for the "incurable" impairment. It is on this premise that policy makers provide service options like rehabilitation, vocational training for employment, income maintenance programs and the provision of aids and equipment to the disabled (Stone, 1997, Tremain, 2001& Terzi, 2004). Although the medical model emphasizes cure to alleviate the physical and mental conditions of many disabled people, but cure alone does not offer a realistic approach because most disabled persons reject the idea of being seen as "abnormal" (Goering, 2008). Concentrating on cure as the main problem solving technique provides justification for institutionalization and segregation which restrict the disabled from controlling their lives and developing their potentials.
Therefore, medical model introduces prejudice in the minds of employers. Employers are reluctant to engage the services of disabled persons because of the thought that a disabled person will be ipso facto prone to constant ill health and sick leave, thereby be less productive than other work colleagues. As a result, employers discriminate by engaging more the services of non-disabled people than that of the disabled.

The Social Model of Disability:
The negative attitudes meted to the disabled as a result of cultural differences gave rise to the development of social model (Ingstad and Reynolds Whyte 1995). The model examined the ways in which the body and the physical characteristics of a disabled person give value and meaning. As a result, the social model of disability sees the issue of "disability" as a socially created problem where the disabled persons are denied full integration into the society. In this model, disability is regarded as a complex collection of conditions, which are created by the social environment. For this reason, management of the problems of the disabled requires social action and collective responsibility of the society to make the environment conducive for them to participate in social life. Therefore, intervention using the social model needs both cultural and ideological issues to initiate social change and conducive environment.

Proponents of social model believe that disability is a social oppression where society intentionally puts barriers (attitudinal, environmental and organisational) to prevent disabled people from having equal opportunity in accessing social services (education, employment, housing and transport) like others. These barriers lead to discrimination and removal of the discrimination requires change in the way society is organized. **Using the social model, it is believed that the society needs to change its negative attitude toward the disabled and allow the disabled the right to function in the society. There are two main concepts in this model. First is that impairment is part of an individual and second, that disability is the problem of the society and not that of the disabled.**

Social model presents a complex and controversial picture of disability in both developed and developing countries by analyzing the cultural diversity and commonalities of disability in various ways. While developed countries provide welfare schemes to the disabled, others do not (Flood 2005; Sheldon 2005). Notwithstanding the cultural differences, commonality is an overriding picture in disability (Hughes 2002). Commonality is engendered by multiple deprivations which result to poverty. Social model views the disabled as the poorest of the poor in any society. However, disabled people are relatively poor in the developed world and absolutely poor in the developing world (Stone 1999).

The establishment of Disabled Peoples' International (DPI), is an expression and realization of commonality which represents disabled individuals with different types of impairments. The objective of DPI is to ensure that the voice of disabled people is heard in the development of all policies and programs that directly affect them, hence the slogan "Nothing about Us without Us". It also ensures that the human rights of disabled people are respected and implemented. Social model emphasizes the establishment of full citizenship for disabled people. The problem is that the " individual model" or" medical model" has dominated research on disability. This dominance has produced negative impacts in the assessments of disabled people's quality of life (Hurst, 2003 &Barnes 2004). The belief is that the disabled people create their "problems," and not the disabling society. This is why methodological approaches for carrying out research on disability issues are now controlled by disabled people themselves and subsumed under the term *emancipatory research* (Barnes 2004). In terms of social policy, the social model is evident in the establishment of civil and human rights-based policy for the disabled. One clear advantage of the social model is that it promotes social change by encouraging *independent living* (Barnes and Mercer 2006).

The social model was developed to remove barriers which the society artificially created for the disabled. For example if an individual is using a wheelchair as a result of mobility impairment, the individual is not regarded as disabled in an environment where the individual can use public transport and gain full access to a building and its facilities in the same way that someone without the same type of impairment would do. By so doing, the disabled would have the opportunity to determine his or her own life styles like everyone else.

Therefore, the aim of social model of disability is to create positive changes in the way people view disability, as well as to make positive impact on anti-discriminatory policy.

The Expert or Professional Model of Disability:
Professional model of disability is a derivative of the medical model which concentrates on identifying impairments and their limitations by using the medical model, and taking necessary action to improve the health of the disabled person. Professional model produces a system where an active health care service provider prescribes and acts for a passive client. This is why the professional model of disability is described as the " fixer (the professional) and fixee (the client)" technique thereby introduce inequality and no collaboration.

The problem is that the professional's caring method encourages imposition of solutions that are not benevolent enough as to maintain the client's dignity (Menzel,1992, Nordenfelt, 1997, Scotch, & Schriner, 1997). Using this model, the "expert" makes all the decisions and the client accepts and adheres to the decisions made. This makes the client unable to exercise his or her human right freedom of choice. In the end, the client's dignity and the opportunity to participate in basic daily activities that affect life are undermined.

The Tragedy and/or Charity Model of Disability:
The charity model of disability sees the disabled as victims of negative circumstances in the environment who should be pitied. The charity model and the medical model are commonly used by non-disabled people to define and explain disability issues. Charity model is used by charity organizations in fund-raising business. The application of the tragedy/charity model is illustrated when charity organizations televise children in need and care when appealing for funds. The children are televised, and appeals made for their support, to attract sympathy and encourage charitable individuals to donate resources for the upkeep of the children. The appeals help to raise substantial funds to augment the services which governments rarely provide. Studies have shown that many disabled people do not encourage this model. They regard the model as very offensive because it shows disability as negative victim-image. Disabled persons argue that children in need should not be presented as "televisual garbage" to avoid discrimination (Oliver,1990, & Putnam, 1995). Some authors interpret the charity model as a ploy the non-disabled people use to sustain flow of donations to guarantee their work. Therefore, charity model has been described as the "tragic portrayal" of disability (Shakespeare, 2006).

Critics have condemned the use of charity model in treating disability issues arguing that the model causes much discrimination against the disabled. Some authors feel that the biggest problem of the disabled is the idea of the non-disabled viewing them as icons of pity in need of care and support . Thereby regard the disabled as unable to manage their own affairs, and therefore must need charity in order to survive. This view gave rise to tragedy and pity in the

concept of "care" (Wasserman, 2001, & Darke, 2004).

While the tragedy and/ charity model could be commended for assisting in raising resources to care for the disabled persons, it has some disadvantages. The fact that numerous charity organizations support and care for people with different types of disability, and also medically classify them according to their disabilities help to encourage their segregation. The problem is that after segregation, the next stage is to initiates institutionalization of the disabled people. Institutionalization further encourages discrimination of the disabled (Oliver,1990, Barnes, 2004, French, 2004). Given the choice, many disabled persons , would opt for community life to avoid discrimination and charity giving. The disabled disapprove charity giving because it imposes gifts , limits choices, expects gratitude from the beneficiaries, thereby lower beneficiaries self-esteem (French, 2004, James, 2000). The problem is that employers regard disabled people as charitable cases that do not need employment. As a result, employers conclude that making charitable donations will meet social and economic obligations of the disabled persons more than employing them (Barnes, 2004).

However, charitable acts, and caring that bring in some funds to maintain the disabled should not be discouraged. There is need to encourage charity organizations and professionals to review the way they manage donated funds so as to ensure that the funds are channeled towards empowerment and full integration of the disabled into the society. This could make people see the disabled as individuals who require empowerment and not pity.

The Moral Model of Disability:

Moral model believes that individuals are morally responsible for their disability. The model views disability as a result of indulging in bad behaviours and attitudes. This view is represented by the doctrine of "karma" in Indian religion, which is,"what you sow is what you reap".

From religious point of view, disability is seen as punishment inflicted by spiritual force as a result of misdemeanors committed by either the disabled person or someone in the family or community group. Also congenital disorders are regarded as negative actions committed in the previous reincarnation. Using this model, disability is seen as caused by the evil spirits, the devil, witchcraft or God's displeasure. In this situation, exorcism and sacrifice are performed to placate the negative influences of the evil spirit. Exorcisms, rituals, providing care, promoting cure, donations and hospitality are termed as the duty of Christians to the needy(Barnes, & Mercer 2006).

Historically, moral model is the oldest but the least prevalently used because many cultures associate disability with sin and shame, and as a result, disabled persons often develop feelings of guilt . The fact that the model associates shame to families with a disabled person, such families tend to hid the disabled from public view (Oliver, 1996). The family members now keep their disabled person(s) out of school, social gatherings thereby, deny them the opportunity of having meaningful roles in the society. In many circumstances, using this model has resulted in general social ostracism and self-hatred for the disabled (Ingstad, & Whyte. 1995, Stone, 1999, Goggin, & Newell, 2003).

The empowering Model of Disability:

The empowering model of disability allows the disabled person and his/her family to decide the type of treatment and services they wish to benefit from. This gives the disabled and family members the opportunity to choose the type of services they desire from the health care professionals. Using this model, the health care professional is regarded as a service provider whose role is to offer guidance and carry out the client's decisions. In other words, using this model empowers the client to contribute and execute his/her own goals (Boorse, 2010 & Brock, 2005). Here, the professional is a service provider to the disabled client and his or her family. The client and family members will decide and select the types of services they believe will be needed unlike what is obtainable in the expert model .

The Economic Model of Disability:

The economic model of disability describes a person who is unable to participate in work as a disabled person. The model assesses the extent to which impairment affects an individual's productivity and the economic generating potentials. The model evaluates the ability of the disabled person to live independent life. It examines the consequences of the disabled losing earnings opportunities (Basnett, 2001, & Zola, 1989). Economic model is used primarily by policy makers to assess the extent to which those who are unable to participate fully in work enjoy work benefits. The emphasis of the model is on productivity (Brisenden, 1986).

The major challenge of the economic model is how to justify and support in economic terms, the social policy of increasing participation in employment. According to classical economic laws of supply and demand, an increase in the labor market results in decreased wages. Arguably, access to work through equal opportunities reduces an employer's labor costs, but the value of labor is based upon its contribution to marginal cost which corresponds to the cost of producing the last unit of production. This works when employees make equal contribution to the marginal cost. However, evidence has shown that disabled employees make lower contribution than their non-disabled work colleagues resulting in losses in production and profits for the employer (Barnes, & Mercer. 2006, Harpur, & Bales, 2012).

Another problem of economic model is the choice of whether to employ the disabled and pay them less for operational ineffectiveness, or to refrain from employing them for fear of likely loss of productivity. The first option will stigmatize the disabled person by underestimating and comparing their work performance with that of their non-disabled work colleagues. With the second option, employers may have difficulties in assessing the correct level to pay the disabled. However, a situation may arise where productivity and marginal costs of the total workforce of a disabled employee may increase. This leaves the difficulty of how to achieve an equitable, effective, value-for-money benefits of the disabled employee. It is likely that the productivity levels of some employed disabled persons may be high while others may be low. To the group with low productivity they could be termed as unemployable in economic terms. They are the group employers are reluctant to engage their services. To this group, other sources of supporting them without introducing stigmatization should be adopted. There is need to balance equity (the right to self-fulfillment and social participation through work) and efficiency. This constitutes the true value of the use of the economic model of disability.

The market Model of Disability:

The market model of disability recognizes people with disabilities as Stakeholders of consumers and employees in the society. The model looks at the ability of each disabled person to cope with daily life activities. The model encourages people with disabilities to focus on economic empowerment as the only sure means of survival. Using this model, family members, friends and employers are considered as Stakeholders in disability issues. The model is of the view that since the society has large numbers of companies, establishments and government agencies, that they should serve as avenues for employing the disabled persons. Employing the disabled persons will help to meet their social, psychological and economic needs and reduce their dependency on others (Goggin, & Newell. 2003, & Darke, 2004).

The Spectrum Model of Disability:

The spectrum model refers to the range of visible, audible and sensible functions of the body. The model asserts that disability does not mean reduced spectrum of body operations. It argues that one can be disabled and yet perform all functions maximally. This means that disability is not a limitation to the performance of assigned individual roles.

Rehabilitation Model of Disability:

Rehabilitation model of disability is an offshoot of the medical model, which views disability as a deficiency that must be treated by a health care professional especially rehabilitation professional. This model regards the disabled as someone in need of rehabilitation services like vocational training, treatment, counseling and others so as to cope with deficiencies caused by the disability. Rehabilitation model was introduced after the World War II when it became necessary to reintegrate the disabled veterans into the society.

Using this model, the disabled are exposed to both the medical and the rehabilitation models of disability. While medical intervention may be required by the disabled at times, medical services alone may not be the appropriate focus for handling disability related policy matters. This is because many medical conditions that result to

disabilities may not be completely cured by medical treatment . Persons with disabilities need rehabilitation services to integrated them actively into the society. The model sees the disabled as persons in need of medical, social , psychological and vocational rehabilitations for a holistic reintegration into the society. The model discourages Institutionalization and confinement of the disabled persons arguing that such would limit their integration in the society but rather, suggests community services as a better option (Harpur, 2013).

Right-based Model of Disability

Right-based model conceptualizes disability as a socio-political construct. The model emphasizes independence for the disabled. It advocates active political voice for the disabled even though social forces favour the non-disabled (ableism) more than the disabled'. The model encourages the disabled to seek both elected and appointed positions like others in the society. The premise is that the disabled if given equal opportunities like others in the society coud perform as creditably as others, if not more than others.

Conclusion

There are a number of 'models of disability which have been successfully used to treat disability issues, but the two most frequently used are the 'social' and the 'medical' models of disability. The medical model sees the body as machine which requires fixing in order to conform with normal functions. The social model identifies exclusion of the disabled from social activities as the main contributory factor in disabling people. According to social model of disability, physical, sensory, intellectual, or psychological deviations may cause functional limitations or impairments, but not disability

The distinction between biological impairment and social limitation is relevant in deciding the type of model needed to address disability issues especially selecting the appropriate model that would modify the disabled persons' conditions as well as alter the environment for favorable coexistence. In this paper attempts were made to highlight the distinctive roles the service providers, members of the society and the disabled persons would play to address the myriad problems that critically affect the subsistence of the disabled persons. The paper showed the commonalities in each model and how the models compliment each others' efforts in addressing disability issues. The paper highlights the incredible variation in the ways the disabled persons experience stigmatization and discrimination as a result of structural or functional atypicalities. Therefore, for efficient and effective intervention of disabled issues, appropriate models should be used during such interventions.

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Research Paper | Engineering

Time change and Correlation analysis of Nalsarovar Lake

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ABSTRACT

Lake Nalsarovar water level has fluctuated during many years. The paper deals with the investigation of water level data in the period of 1990-2010. To evaluate the changes in patterns based on time , data characteristics and temporal change analysis. The data sets are taken for the satellite images, which help us in analysis of change in patterns. The major aim of this study was to test if it is possible to estimate former changes in the spatial extent of Lake nalsarovar using three sets of satellite imagery from the GLS database (Satellite data (images) covering Lake nalsarovar for three time periods(LANDSAT 5)) were used as data source. During the period 1990-2010, the water level in the lake declined by about 11%. The findings of this current study contribute relevant data to future research developing a hydrologic model for the Lake Nalsarovar basin. The results of this study could also provide a useful tool to local stakeholders (e.g., Lake Nalsarovar Basin Commission, policy makers, national and international NGOs, World Bank and the African development bank) for decision making in the field of water management and agricultural policies, irrigation water distribution and drought management. Results show that there is a significant decreasing trend in water level and the beginning of the change point is 1990. Need of conservation measures is required or soon the wetland will diminish to wasteland.

KEYWORDS : Lake Nalsarovar, GLS data, water level change, time change, NDWI (Normalized difference water index)

INTRODUCTION

Nalsarovar lake has been now included as a wetland in Indian list in 2012. Area covered by Nalsarovar Lake is of 123 km^2 and is located 64 km from Ahmedabad.

Nalsarovar lake Largest wetland bird sanctuary in Gujarat and one of the largest in India.The area is home to 210 species of birds, with average 174,128 individuals recorded there during the winter and 50,000 in the summer. It is a home to endangered wild ass and the black buck, with a migratory Rosy Pelicans, Flamingoes, White Storks, Brahminy Ducks and Herons forming major attractions mainly inhabited by migratory birds in winter and spring.

DATASETS

The images below are taken using the satellite. The data used for the satellite images is GLS data. To observe the change in water level in the lake the three temporal points for dataset – 1990, 2000, 2010 are selected. The interval of 10 years is taken. There was no decrease in amount of rainfall. All the images are taken from the satellite in month of October. The following points of path and row make clear the position of satellite images.

WRS Path: 149
And WRS Row: 44

Sources: www.googleearth.com

To analyze thoroughly the water level change with time a 4-5-3 layer stack were used since this results in very clear land boundary interfaces. As an attempt to measure the water extent, it is very useful

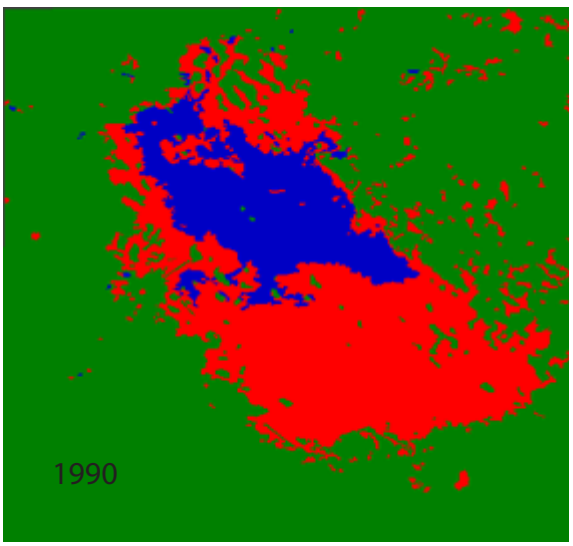
GEO-LINKED the images in vertical two-pane views

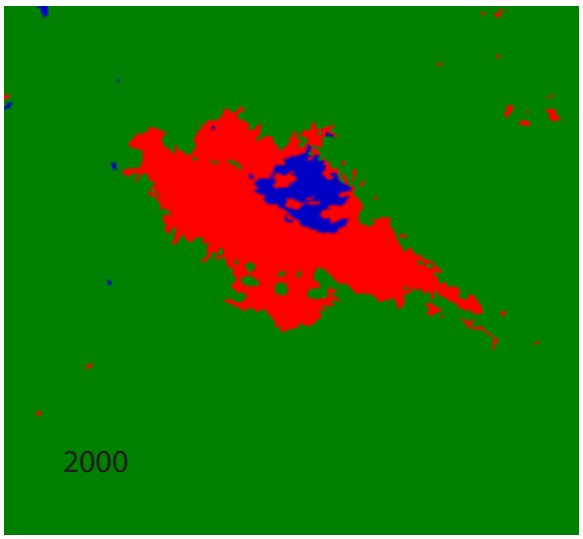
The image was subjected to a dark object subtraction to get rid of the atmospheric errors

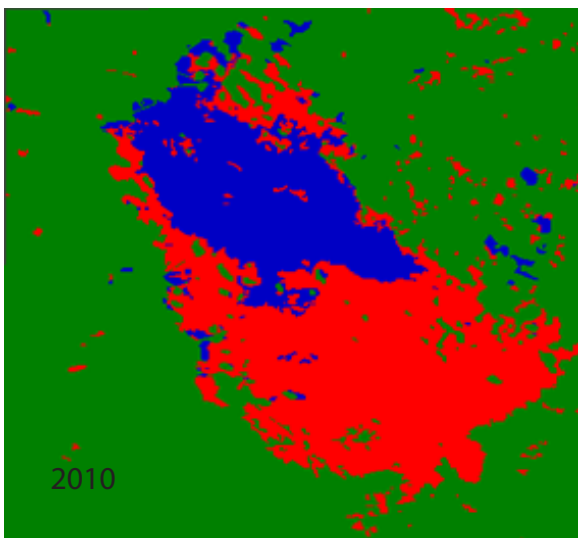
The Vector files were generated and then the conversion of Vector -> ROI was carried out.

Further there were conversions of files ROI -> shp

The following satellite images (with their period) show a clear and broader picture of the scenario.



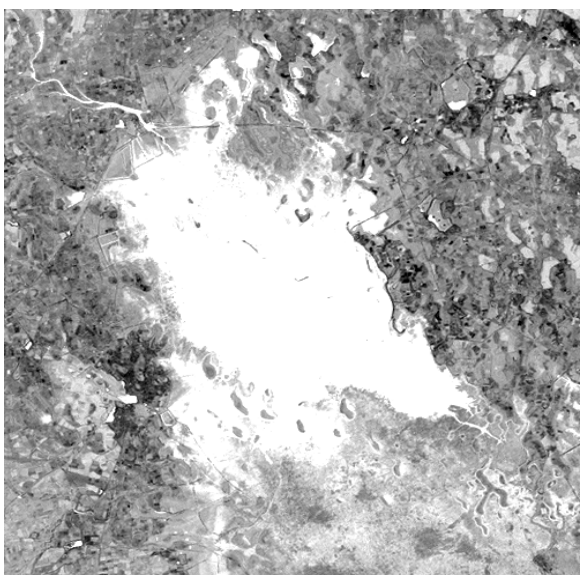


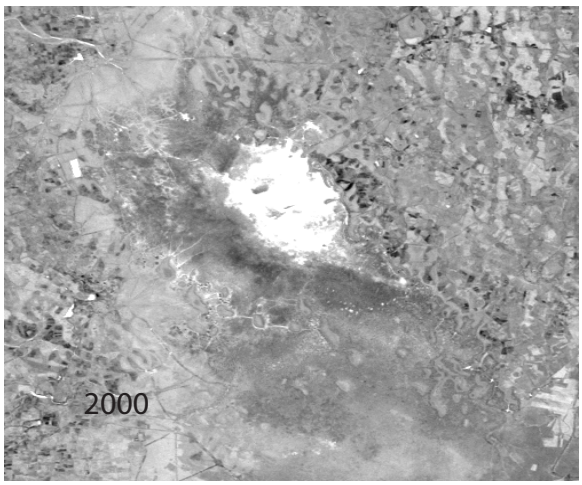


WATER | SHALLOW WATER + WETLAND | VEGETATION

NDWI

NDWI = (Green – NIR)/(Green + NIR)



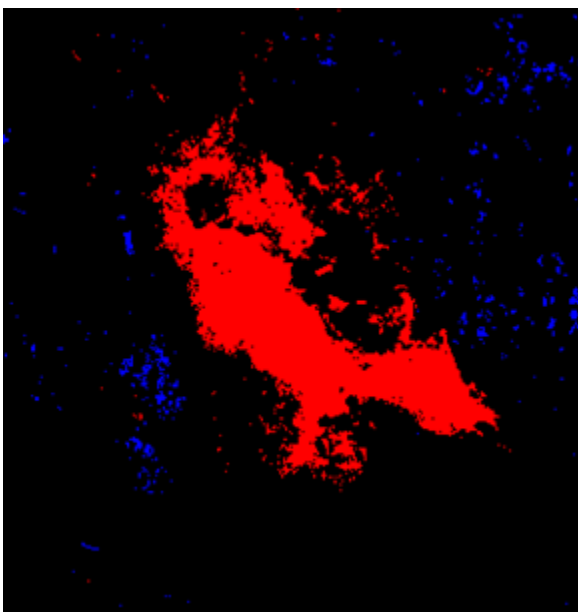


The above images show us the delineation in water level and the decrease in extent of the lake area.
Now we get a much clear idea of the analysis done to obtain the results in a time period.

IMAGE DIFFERENCE USING NDWI

The Normalized Difference Water Index (NDWI) makes use of reflected near-infrared radiation and visible green light to enhance the presence of such features while eliminating the presence of soil and terrestrial vegetation features.

We can visualize the change in the body by using Image Difference between time points

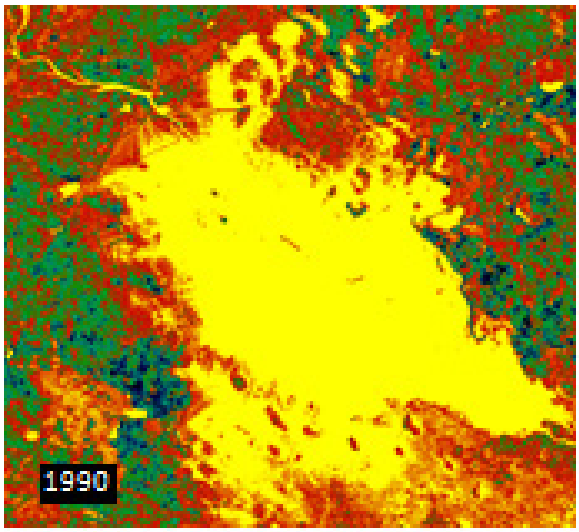


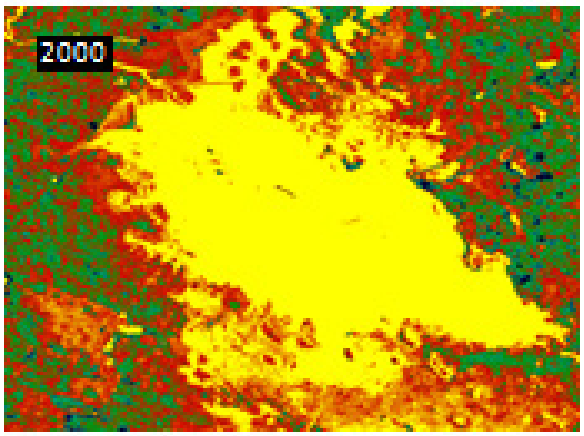
- Red indicates decrease in value
- Blue indicates increase in value

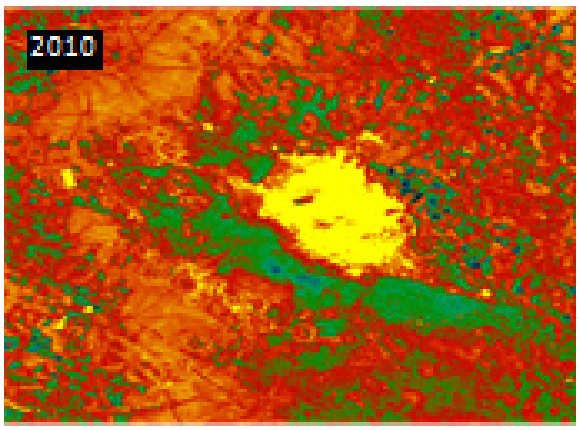
After exploring the resulting grayscale NDWI image, it becomes apparent that there is a threshold near zero where values above the threshold are water and those below are land and cloud. While this data is alone sufficient for analysis, we use something more colorful for visualizing the output.

One can hence use Raster color slices for better visualization. Warm colors (reds and yellows) indicate water and cool colors (blues and green) indicate land/cloud.

Change in colour table







Conclusions

There has been a definite decrease in the water value levels about 11.35% from 1990-2010 and 8% from 2000-2010 and 2% from 2010 till date.

The NDWI that is normalized difference water index classification is giving very clear delineation and very accurate representation. Change Detection also corroborates the decrease in water boundary and extent.Quantifiable change obtained in sudden decrease from 2000 to 2010

The wetland area has decreased drastically and conservation measures are required to safeguard the water level and its extent.

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Research Paper | Medical Science

Acute Necrotizing Pancreatitis Due to Ascariasis in a Child.

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ABSTRACT *Acute necrotizing pancreatitis although rare in children is associated with significant morbidity and mortality. Ascaris lumbricoides is a common intestinal parasite in tropical and temperate regions. Although usually asymptomatic, Ascaris infection can lead to biliary or intestinal obstruction and very rarely obstruction of the main pancreatic duct due to its smaller lumen and cause acute pancreatitis. We report a 5 year old male child with acute necrotizing pancreatitis associated with Ascariasis who was managed successfully.*

KEYWORDS : Pancreatitis, Ascariasis, child.

Introduction: Acute necrotizing pancreatitis although rare in children is associated with significant morbidity and mortality. *Ascaris lumbricoides* is a common intestinal parasite in tropical and temperate regions. Although usually asymptomatic, Ascaris infection can lead to biliary or intestinal obstruction and very rarely obstruction of the main pancreatic duct due to its smaller lumen and cause acute pancreatitis. We report a 5 year old male child with acute necrotizing pancreatitis associated with Ascariasis who was managed successfully.

Case Details: A five year old male child admitted with history of pain in abdomen, abdominal distension and multiple episodes of vomiting round worms since three days. On admission he was febrile and had tachycardia (HR 160/ minute), tachypnea (RR 50/ minute), weak peripheral pulses, cold extremities, prolong capillary refill time and low blood pressure (65/48mmHg). Per abdomen examination revealed marked distension with generalized tenderness, rigidity & diminished bowel sounds. The breath sounds were absent in bilateral lower axillary and infra scapular areas. He was drowsy but had no neurological deficit. In view of severe abdominal tenderness, vomiting and guarding; intestinal obstruction with pancreatitis was suspected and was investigated accordingly.

On investigations, Hemogram revealed leukocytosis (Hb10.2gm%TLC 23,000/cu mm, Platelet 4.4lacs/cu mm) and C-reactive protein was 103mg/dl. His Serum Sodium, Potassium, Chloride & Calcium levels were 132meq/l, 3.5meq/l, 94meq/l and 8.2mg/dl respectively. Serum Amylase was1607 IU/L & Lipase was 445 IU/L. Roentgenogram erect abdomen showed multiple air fluid levels in bowel (Fig -1). Ultrasound of abdomen revealed dilated small bowel loops with sluggish peristalsis with worms in the lumen & moderate ascites with internal echoes.

Computerized Tomography of abdomen (Fig-2) and chest revealed bulky heterogeneous pancreas with extensive necrosis and fluid collection in peripancreatic, anterior pararenal space and Gerota's fascia associated with mesenteric fat stranding & thickness of retroperitoneal fascia. All features were suggestive of acute necrotizing pancreatitis with modified CT severity index of 10.[1]There was moderate ascites and thrombosis of entire splenic vein, superior mesenteric vein extending up to the confluence of portal vein, with partial thrombosis of portal vein.

There was bilateral lower lobes consolidation, atelectasis and moderate pleural effusion.

He was kept nil orally with continuous gastric drainage for seven days. He received intravenous fluids, antibiotics, Albendazole, Octreotide and low molecular weight heparin (LMWH). He required bilateral intercostal drainage, ventilatory and inotropic support. He was discharged after 10 days. He received LMWH for three months and repeat Doppler showed resolution of thrombus without recurrence of pancreatitis and any other complication.

Discussion: Acute pancreatitis (AP) is not rare in children, like in adults; its incidence is also on rise. Several studies reported increasing incidence since last 15 years.[2, 3] The reported incidence of AP in children varies from 3.6 to 13.2 cases per 100000/year.[4] While the incidence of acute necrotizing pancreatitis (ANP) is less than 1% in children.[5] There are few isolated case reports of acute necrotizing pancreatitis in children.[6, 7, 8, 9, 10]

In which drugs (L – Asparginase) and infections (Mycoplasma Pneumonia etc.) were found to be common causes. The case reports on Ascaris Lumbrecoides causing ANP are very few.[11, 12]

Ascaris along with intestinal obstruction can also obstruct hepatopancreatic ampulla, pancreatic and common bile duct. Obstruction can lead to pancreatitis and necrosis.[13, 14]The hepatobiliary duct network in children is narrow and more difficult for worm to enter. The presence of worms in intestinal lumina might have caused the obstruction at hepatopancreatic ampulla although the worms were neither seen at ampulla nor inside the duct as it may have migrated. The worm enters the pancreatic duct only as a result of abnormal migration. The clinical diagnosis of Ascaris pancreatitis requires a high degree of suspicion. While intestinal obstruction is more common in children, pancreatic ascariasis, unlike in adults, is rare.[11, 12, 14]

The most commonly involved vessel is the splenic vein (in 70% of patients). Involvement of all three vessels i.e. splenic, superior mesenteric and portal vein is extremely rare which was present in our patient.[15, 16]

The conservative approach to treat pancreatitis is still an accepted form of treatment. Our patient responded well and did not show any further complication.

Conclusion: Although acute pancreatitis is common problem in children, acute necrotizing pancreatitis is rare. In developing countries intestinal infestations with Ascaris Lumbrecoides should be suspected as one of the cause of pancreatitis. A high index of suspicion along with early institution of appropriate management can decrease morbidity and mortality related to ANP.

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Fig -1 Roentgenogram Erect Abdomen showing Bowels with Air Fluid Levels Suggestive of Intestinal Obstruction.

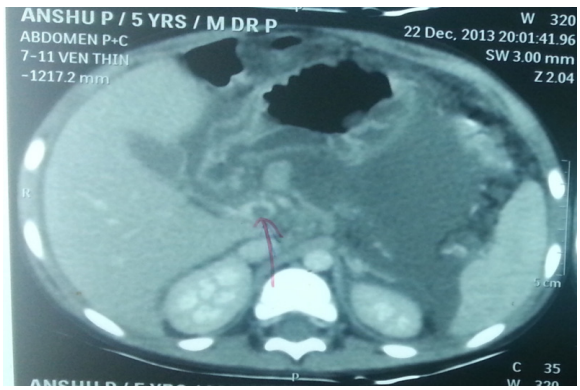
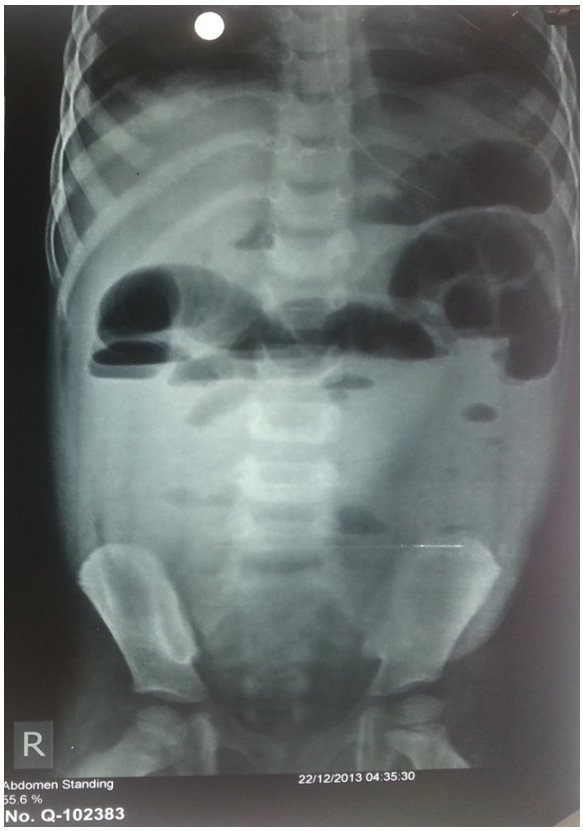


Fig -2 Computerized Tomography of abdomen s/o extensive necrosis of pancreas with

peripancreatic and pararenal fluid collection and thrombosis of Splenic, Portal (Red arrow) and Superior Mesenteric veins.



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Research Paper Psychology

Positive Psychology Interventions: Modifiers of Interpersonal Needs, Gerotranscendence, and Well-Being in Geriatrics

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ABSTRACT

The present study focuses on positive psychology interventions as the modifiers of Interpersonal Needs, Gerotranscendence and Well-Being in geriatrics. A multiphase sampling method was used to select 96 people between the age group of 60-90 years from Retirement homes and Old age homes of Hyderabad. The results revealed a significant correlation between Interpersonal Needs, Gerotranscendence and Well-Being. Significant difference was found between Interpersonal Needs, Gerotranscendence and Well-Being in Geriatrics living in old-age homes and retirement homes. Positive psychology interventions were found to significantly enhance Gerotranscendence and Well-Being and reduce feelings of perceived burdensomeness and thwarted belongingness in Geriatrics living in old-age homes and retirement homes. The study brought into light the need for encouraging elderly to practice simple positive psychology techniques to enhance their well-being and quality of life during

KEYWORDS : well-being, positive psychology, aging, geriatrics, old age, retirement, older adults, gerotranscendence, interpersonal needs.

The Indian geriatric population constitutes only upto 7% of the total population, yet serious consideration has not been given to their concerns and issue. Geriatric or aging population, are those adults over the age of 60 years (Govt of India, 1995; 2007).Statistical data has shown that 65% of the Indian geriatric population are dependent for their everyday care (Ministry of Statistics & Program Implementation Central Statistics Office, India, 2011). Due to transitions in the Indian society from the traditional joint family structure to nuclear family setting, there is an increased probability of the elderly to be exposed to economic, emotional and physical uncertainty in the years to come. Aging involves changing needsfor support and assistance. Decreased functioning, coupled with unmet needs and feelings of failure during aging increases dependency and may give rise to feelings of loneliness (Dykstra, Tilburg, &Gierveld, 2005). Along with decreased functioning, dependency and seclusion, old age is also associated with changes in relationships, autonomy, roles of an individual and their status in society (Marty, 2011). Providing support to the elderly to achieve and enhance personal growth is substantial for their well-being(Roach, 2001).

Interpersonal needs comprise of two components: perceived burdensomeness and thwarted belongingness. Perceived burdensomeness refers to a self-view that one is defective and flawed, to the point of being a liability to others(Joiner, 2005). Significant correlation has been found between age and perceived burdensomeness, which suggested greater perceptions of burdensomeness reduces thesense of meaning in life, placing the elderly at risk for negative health outcomes, resultingin decreased mental well-being (Cukrowicz, Cheavens, Orden, Ragain, & Cook, 2013;Orden, Lynam, Hollar, & Joiner, 2006; Orden, Bamonti, King &Duberstein, 2012). However, fear of being a burden on others is not only felt by those who are terminally ill, but also by older adults who are presently healthy and living independently in the community (Malpas, Mitchell, & Johnson, 2012).

A new perspective to aging has emerged from the Tornstam's theory of Gerotranscendence (1989). The theory highlights aprogressive change from an object-oriented view of the world to a more transcendental one, usuallywith increased life satisfaction. Cosmic transcendence is explained as a transition from seeing oneself as significant to an enhanced coherence with the world, as being a part of "the universe." Sadler, Braam, Groenou, Deeg and Geest (2006), found a relationship between loneliness and cosmic transcendence which is a dimension of gerotranscendence scale.They found that when there are low levels of cosmic transcendence, there is low level of feeling of belongingness.Sood and Bakshi (2012) showed that social support plays a critical role in the lives of aged individuals and acts as a significant resource as they age. It generates the sense of self-worth and positive affect (Cohen &Syme 1985).

The concept of well-being encompasses the mental and emotional, social, spiritual, andphysical dimensions of health viz. maintaining a healthy body and seeking care when needed, develop their potential, work productively and creatively, build strong and positive relationships with others,developa set of values that help in seeking meaning and purpose and contribute to their community (Cooper, 2008). Well-being and health play an important role in old age. Kuria (2012), states that most age related changes have tendency of leading to psychosocial problems because when age related changes begin to manifest in the body system, hope is lost, disorganization of thoughts occurs, stress level goes higher and psychosocial problem would possibly set in.

The relationship between engaging in positive activities andimprovements in well-being was mediated by perceived increases in satisfying experiences(Dickerhoof,2007). Fredrickson et.al (2008) showed that increases in positive emotionsexperienced as a result of a meditation activity fostered personal resources such as socialrelationships and physical health, increased life satisfaction.Positive Psychology Interventions (PPIs) as those that focus on positive topics; operate by a positive mechanism or target a positive outcome variable; and are designed to promote wellness rather than to fix weakness(Parks,2013). PPIs involve simple, self-administered cognitive or behavioral strategies. Researchrevealed that PPIs resulted in increased sense of well-being, adaptive personality characteristics, positivesocial relationships, vitality, reduced symptoms of anxiety and depression and promoted well-being (Bolier, 2015; Wood, Froh&Geraghty, 2010; Sin &Lyubomirsky, 2009; Seligman, Rashid, & Parks, 2006)

There is a dearth of studies that show these variables together in the Indian context. The literature on gerotranscendence and mental, physical, and spiritual well-being is sparse and has not been used along with PPIs.This study was undertaken to examine the role that-PPIs play on their interpersonal needs, aging patterns along with their well-being.It was also undertaken to examine whether there exists

any difference between the same in the population staying in retirement homes and in old age homes.

Objectives:

1. To assess the effect of Positive Psychology interventions on Interpersonal needs, Gerotranscendence and Mental, Physical and Spiritual well-being among geriatrics living in retirement homes and old-age homes.

2. To find a relationship between Interpersonal needs, Gerotranscendence and Mental, Physical and Spiritual Well-being in Geriatrics.

3. To find a difference between Interpersonal needs, Gerotranscendence and Mental, Physical and Spiritual Well-being in Geriatrics living in retirement homes and old-age homes.

Method

The study used a pretest- posttest, quasi-experimental design to assess the role of positive psychology interventions on interpersonal needs, gerotranscendence and mental, physical and spiritual well-being among geriatrics living in old-age homes; a place where older people stay together in large rooms and retirement homes; a group of flats or bungalows where all residents are older people. (Elderly Accommodation Counsel; EAC, 2015), A correlation design was also used to study the relationship between interpersonal needs, gerotranscendence and mental, physical and spiritual well-being in geriatrics where the sample was treated as the independent variable and interpersonal needs, gerotranscendence and mental, physical and spiritual well-being were treated as the dependent variables. A within group design was used to find the difference between interpersonal needs, gerotranscendence and mental, physical and spiritual well-being in geriatrics living in retirement homes and old-age homes.

The sample consisted of 96 physically independent older adults between the age group of 60-90 years living in retirement homes and old age homes selectedfrom the Metropolitan city of Hyderabad.The sample technique used to employ the members of the sample group is of multiphase sampling. This sampling technique involved three stages. In the first stage, information about all retirement homes and old age homes in Hyderabad was collected through the internet. In the second stage, the retirement homes and old age homes were divided into area-wise clusters and some of the old-age and retirement homes were selected through a random sampling method. The retirement homes and old age homes were approached for a consent. In the next stage a purposing sampling technique was used to approach the participants and collect data.

Instruments

The Interpersonal Needs Questionnaire developed by Joiner, Orden, Witte, and Rudd (2009), Gerotranscendence Scale Revised (Cozort,2008) and Mental Physical and Spiritual Wellbeing Scale (Brodrick& Allen, 1995) were the instruments used for the purpose of the study

An Intervention Module was developed by collaborating positive psychology activities that focused on mindfulness, optimism, gratitude and happiness. The module was designed keeping in mind the requirements and limitation of the intended sample. It consists of four activities that last for a duration of 15 minutes and include breathing exercise, three good things today (Seligman, 2005), laughter therapy (Kataria, 1995) and positive affirmations (Hay, 2004).

Procedure:

The research was conducted in three parts, pre-test, intervention and post-test phase. After the administrative formalities, the pre-test was conducted. The intervention was administered to those who gave consent to attended the intervention regularly for a period of 30 days. In the post test phase all the scales were administered tothe participants. Finally, 20 participants each from retirement home and old age home were administered the scales in the post-test phase. The data was statistically analyzed using IBM SPSS version 20.\

RESULTS

The results attempted to find out if the pre-and post-test groups significantly differed on interpersonal needs, gerotranscendence, and mental physical and spiritual well-being. A paired t-test was conducted. The results of paired t-test with corresponding M and SD are presented in Table-1

Table 1

Differences in interpersonal needs, gerotranscendence,and mental physical and spiritual well-being before and after treatment among geriatrics.

	Paired Differences			t-value	Df
	Mean	Std. Deviation	Std. Error Mean		
PB	20.00	14.70	2.32	8.61**	39
TB	4.03	7.34	1.16	3.47**	39
COS	1.60	2.45	.39	4.00**	39
COH	2.58	2.46	.39	2.40*	39
SOL	-7.40	3.46	.55	9.48**	39
MWB	6.30	3.55	.56	11.27**	39
PWB	1.53	2.42	.38	3.80**	39
SWB	3.28	4.21	.67	1.67	39

Note: PB= Perceived Burdensomeness, TB= Thwarted Belongingness, COS= Cosmic transcendence, COH= Coherence dimension, SOL= Solitude dimension, MWB= Mental Well-Being, PWB= Physical Well-Being, and SWB= Spiritual Well-Being,

The results of the paired-samples t-test indicated a significant difference in perceived burdensomeness t (39) = 8.61, p<.01, thwarted belongingness t (39) = 3.47, p<.01, cosmic transcendence t(39) = 4.00, p<.01, coherence transcendence t (39) = 2.40, p<.05, solitude transcendence t(39) = 9.48, p<.01, mental well-being t (39) = 11.27, p<.01, physical well-being t (39) = 3.80, p<.01, no significant difference was observed in spiritual well-being t (39) = 1.67, before and after the intervention among geriatrics.

Inter-Correlations were conducted to find the relationship between Interpersonal Needs, Gerotranscendence and Mental Physical Spiritual Well-Being.The results are presented in Table-2

Table 2

Correlation Measures of Interpersonal Needs, Gerotranscendence and Mental Physical Spiritual Well-Being.

	PB	TB	COS	COH	SOL	MWB	PWB	SWB
PB	1	.33**				-.18	-.31**	-.18
TB		1	-.15			-.34**		
COS			1				-.16	.37**
COH				1		.17		
SOL					1		.17	
MWB						1		.28**
PWB							1	
SWB								1

Note: PB= Perceived Burdensomeness, TB= Thwarted Belongingness, COS= Cosmic transcendence, COH= Coherence dimension, SOL= Solitude dimension, MWB= Mental Well-Being, PWB= Physical Well-Being, and SWB= Spiritual Well-Being,

N= 96, **p<.01, *p<.05

The results showed a significant negative correlation between mental well-being and thwarted belongingness (r= -.34, p< .01). Physical well-being was negatively correlated with perceived burdensomeness (r= -.31, p< .01). A significant positive correlation was found between spiritual well-being and cosmic transcendence (r= .37, p< .01). Significant positive correlation was also found between perceived burdensomeness and thwarted belongingness (r= .33, p< .01).

The results of the One- Way Analysis of Variance of geriatrics living in retirement homes and old-age homes by Mental Physical and Spiritual Well-Being, Interpersonal Needs and Gerotranscendenceis presents in Table-3

Table 3
One- Way Analysis of Variance of geriatrics living in retirement homes and old-age homes by Mental Physical and Spiritual Well-Being, Interpersonal Needs and Gerotranscendence.

Variable	Groups				One-Way Anova		
	Retirement home (n=42)		Oldage home (n=54)		Mean Square		
	M	SD	M	SD	Between	Within	F (1,94)
MWB	30.81	6.62	25.31	4.50	713.28	30.53	23.36**
PWB	33.19	5.26	33.43	4.96	1.31	25.91	.05
SWB	34.48	8.70	33.09	8.12	45.23	70.16	.65
PB	48.55	16.76	54.11	13.26	731.25	221.53	3.30
TB	30.81	10.13	34.67	9.09	351.48	91.35	3.85*
COS	29.93	3.38	30.67	3.39	12.87	11.48	1.12
COH	16.17	2.46	17.17	2.37	23.63	5.80	4.07*
SOL	22.43	3.72	21.33	3.22	28.34	11.90	2.38

Note: MWB= Mental Well-Being, PWB= Physical Well-Being, SWB= Spiritual Well-Being, PB= Perceived Burdensomeness, TB= Thwarted Belongingness, COS= Cosmic transcendence, COH= Coherence dimension and SOL= Solitude dimension.

N= 96, **p<.01, *p<.05

The results revealed a significant difference in mental physical spiritual well-being- mental dimension (F= 23.36, p< .01), interpersonal needs- thwarted belongingness dimension (F= 3.85, p< .05), and gerotranscendence- coherence dimension (F= 4.07, p< .05) among geriatrics living in old-age homes and retirement homes. The mean scores revealed that mental well-being is higher in geriatrics living in retirement homes (M= 30.81, SD= 6.62) than in old age homes (M= 25.31, SD= 4.50). The mean scores on the dimension of thwarted belongingness was higher for geriatric living in old age homes (M= 34.67, SD= 9.09) as compared to retirement homes (M= 30.81, SD= 10.13). The mean scores on coherence dimension was higher in geriatric living in old age homes (M= 17.17, SD= 2.37) than retirement homes (M= 16.17, SD= 2.46).

DISCUSSION

The study revealed thatPositive Psychology interventions had a significant effect on Interpersonal needs, Gerotranscendence and Mental, Physical and Spiritual well-being. A high significant difference was noted on the dimension of mental well-being revealing that positive psychological interventions indeed enhance mental well-being, Research (Seligman et al., 2006; NIH, 2008; Bolier,2015) also stated that positive psychology interventions reduce anxiety and depression leading to increased mental well-being.A significant difference in perceived burdensomeness substantiates that practicing and participating in positive psychology interventions reduces feelings of worthlessness and burden. Wood et al., (2010) state that positive psychology interventions help developing positive social relations thereby decreasing the feelings of burdensomeness.

The study brought into light significant association between Interpersonal needs, Gerotranscendence and Mental, Physical and Spiritual well-being. Perceived burdensomeness wasfound to be negatively correlated with physical well-being suggestingthat when there is an increased feeling of burden, there is a decline in the physical health in geriatrics. Cohen and Syme,(1985) stated that social support increases sense of self-worth and positive affect and is an important factor for physical health. Thwarted belongingness and mental well-being were found to be negatively correlated, when feelings of loneliness and isolation increase, there a decrease in the mental well-being of geriatrics. A study by Kalpakci et al., (2014) suggests that conflictual family relations and thwarted belongingness contribute to decreased mental well-being. The dimension of cosmic transcendence was found to be positively correlated withspiritual well-being suggesting thatduring old age one's view transcend from material possessions to superior universal possessions, thus enhancing the spiritual sense of an individual.

Among geriatrics living in old-age homes and retirement homes-significant differences were observed on the dimension of mental well-being dimension; thwarted belongingness dimension; and coherence dimension. Geriatricsliving in retirement homes were found to have enhanced mental well-being than geriatrics living in oldage homes. Age effects the physical well-being of the elderly,declined physical functioning and well-being is an important characteristic of old age (Marty,2011), similar results were observed in the present study where no differences were observed on physical well-being geriatrics living in retirement homes and oldage homes.

Aging encompassesdecreased functioning,increases dependency, unmet needs, and failure like feelings, give rise to feelings of solitude (Dykstra, Tilburg, &Gierveld, 2005). The needfor support and assistance is augmentedat this stage of life. To help the elderly achieve satisfaction and bring about meaning in their life it is important to assist them to enhance their health and well-being and enrich the aging process. Positive psychology interventions can play a great role (Seligman et al., 2006; Wood et al., 2010; Bolier, 2015) in such circumstances. While most of the research(Lynn & Adamson, 2003; Morrison, 1997; Norman, 1982) focused on illness and death, positive aspects such as well-being and golden years of agingought to be encouraged. The findings of the present study will be helpful for clinicians, social workers, caregivers and other professionals to understand the role PPIs play on the interpersonal needs, aging and well-being in old adults so that they can incorporate these activities and in-turn motivate and enhance their living years. The results will provide guidelines for the state and national programs aimed at developing policies for the aged. It will also help them in effective implementation of health and security schemes.The study paves a way for cross-cultural or cross-sectional research, as the present scenario perceivesincreasing geriatric population, and disintegration of the traditional joint family living arrangement across cultures.

UN Secretary General Kofi Annan (2010), while referring to the ageing population had observed: "With age, human beings gain immeasurable depth and breadth of experience and wisdom. That is why older persons should not only be respected and revered but they should be utilized as the rich resource to society that they are".

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Acute and Chronic Effects of Disturbance Control Factors, Complications and Treatment Method: A Review

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ABSTRACT

The main aim of this study was to collect the experiences of Iranian researchers about different types of tear gases and pepper sprays, effects, treatment strategies and also to provide a guideline for the prevention of abuse of these dangerous agents. Tear gases include CS, CN, CA and OC sprays most common of which is CS. Tear gas that through the eyes of confusion (tearing and spasm) of the eyelids and closing the gases, and through upper respiratory tract irritation (sneezing and vomiting) temporary disables the person. Pepper spray, also known as OC spray (from "oleoresin capsicum"), OC gas, and capsicum spray, is a lachrymatory agent (a chemical compound that irritates the eyes to cause tears, pain, and temporary blindness). It isused in policing, riot control, crowd control, and personal self-defense, including defense against dogs and bears. Its inflammatory effects cause the eyes to swell, impairing the vision. The results also show that tear gas abstract by target tissues of the eyes, skin, digestive system and affects the nerves. There is no effective antidote to common tear gases; however, decontamination is the first line of action. Once a person exposed to these agents, there is a variety of methods to remove as much chemical as possible and relieve the symptoms. The standard first aid for burning solutions in the eye is irrigation (spraying or flushing out) with water, and some evidence suggests that diphoterine solution, a first aid product for chemical sprays, may help with ocular burns or chemicals in the eye. As chemical gases are easily accessible and the risk of their being used threatens people, the proposed approach is necessary to control all gases. It is suggested that these gases and sprays be less available and less used. Furthermore, the proper administration route of these tools should be taught to people.

KEYWORDS : Tear gas; Pepper spray; Debilitating agents; Skin conditions; Chemical injuries

1. Introduction

Tear gas and other chemical substances have gained widespread acceptance as a means of controlling civilian crowds and subduing barricaded criminals [1]. The most widely used forms of tear gas are o-chlorobenzylidenemalononitrile [CS], chloroacetophenone, [CN], dibenzoxazepine [CR] and oleoresin capsicum [OC]. Proponents of their use claim that if used correctly, the noxious effects of exposure are transient and of no long-term consequences [2]. The use of tear gas in recent situations of civil unrest, however, demonstrates that exposure to this weapon is difficult to control and it is often not used correctly. Severe traumatic injuries from exploding tear gas bombs, as well as lethal toxic injuries, have been documented [3]. Moreover, available toxicological data are deficient as to the potential of tear gas agents to cause long-term pulmonary, carcinogenic, or reproductive effects. Published and recent unpublished in vitro tests have shown o-chlorobenzylidenemalononitrile to be both clastogenic and mutagenic. Sadly, the nature of its use renders analytic epidemiologic investigation of exposed persons difficult [3]. In 1969, eighty countries voted to include tear gas agents among chemical weapons banned under the Geneva Protocol [4]. There is an ongoing need for investigation into the full toxicological potential of tear gas chemicals and renewed debate on whether their use can be condoned under any circumstances [5, 6, 7].

TEAR gas is a weapon that has become familiar to the world. Hardly a week goes by without press reports of tear gas being used in a public setting, typically for the dispersal of demonstrators or the subdual of a barricaded criminal [8]. Recent years have seen the use of large amounts of tear gas in several countries, including Chile; Panama; South Korea; and the Gaza Strip and West Bank, Israel. Liar gas is actually the common term for a family of chemical compounds that have been otherwise referred to as "harassing agents" because of their ability to cause temporary disablement. Some 15 chemicals have been used worldwide as tear gas agents. Six of these- chloroacetophenone [CN], o-chlorobenzylidenemalononitrile [CS], 10-chloro-5, l0-dihydrophenarsazine, bromo-tolunitrile, dibenzoxazepine [CR] and pepper spray [OC] have been used extensively. [1] In the United States, Britain, and Europe, CN and CS have been employed most widely. o-Chlorobenzylidenemalononitrile [CS], in particular, is a weapon that has gained widespread acceptance as a means of controlling civilian populations during disturbances [9].

The widespread use of tear gas agents naturally questions their safety. Relatively little, however, has appeared in the mainstream medical literature regarding their toxicology. In general, authors of review articles have averred that, if used correctly, the noxious effects of exposure are transient and of no long-term consequence. [10,11,12]. Much emphasis has been given to the findings of the Himsworth Report, [13] the results of an inquiry by a committee appointed by the British Secretary of State for the Home Department following the use of CS in Londonderry, Northern Ireland, in 1969. In addition to investigating the use of CS in Londonderry, the committee reviewed a wide range of scientific data. Its main conclusion was that while exposure to CS can be lethal, most likely in the form of toxic pulmonary damage leading to pulmonary edema, such an occurrence would only be at concentrations that were several hundred times greater than the exposure dosage that produces intolerable symptoms [14]. Many questions remain, however, unanswered. Epidemiologic inquiry following the use of tear gas under actual field conditions has been almost completely absent [16].

The term tear gas, also called Lacrimator, can be used for any chemical substance that irritates the mucous membranes of the eyes, causing a stinging sensation and tears. These gases may also irritate the upper respiratory tract, causing coughing, choking, and general debility. Tear gas was first used in World War I in chemical warfare, but since its effects are short-lasting and rarely disabling, it came into use by law-enforcement agencies as a means of dispersing mobs, disabling rioters, and flushing out armed suspects without the use of deadly force.

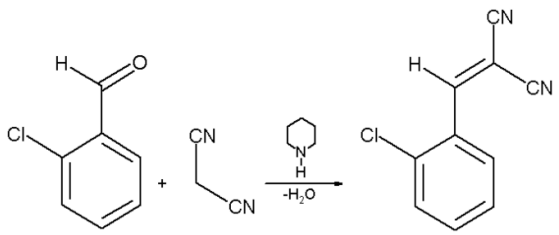
The substances most often used as tear gases are synthetic organic halogen compounds; they are not true gases under ordinary conditions but are liquids or solids that can be finely dispersed in the air through the use of sprays, fog generators, or grenades and shells [3]. The two most commonly used tear gases are ω-chloroacetophenone, or CN, and o-chlorobenzylidenemalononitrile, or CS. CN is the principal component of the aerosol agent Mace and is widely used in riot control. It affects chiefly the eyes. CS is a stronger irritant that causes burning sensation in the respiratory tract and involuntary closing of the eyes, but its effects wear off more quickly, after only 5 to 10 minutes of breathing fresh air. Other compounds used or suggested as tear gases include bromoacetone, benzyl bromide, ethyl bromoacetate, xylyl bromide, and α-bromobenzyl cyanide. The effects of tear gases are temporary and reversible in most cases. Gas masks with activated charcoal filters afford good protection against these gases. Different types of tear gas included CS, CN, CA and OC.

1.1. CS and other tear gas agents

The compound 2-chlorobenzalmalononitrile [also called o-chlorobenzylidene malononitrile] [chemical formula: C10H5ClN2], a cyanocarbon, is the defining component of a tear gas commonly referred to as CS gas, which is used as a riot control agent. Exposure to this agent causes a burning sensation and tearing of the eyes to the extent that the subjects cannot keep their eyes open. In addition, the burning irritation of the nose, mouth and throat mucous membranes causes profuse coughing, mucous nasal discharge, disorientation, and difficulty breathing, partially incapacitating the subject. CS gas is an aerosol of a volatile solvent [a substance that dissolves other active substances and evaporates easily] and 2-chlorobenzalmalononitrile, which is a solid compound at room temperature. CS gas is generally accepted as being non-lethal. It was discovered by two Americans, Ben Corson and Roger Stoughton [5] at Middlebury College in 1928, and the chemical's name is derived from the first letters of the scientists' surnames [6, 8].

CS was developed and tested secretly at Porton Down in Wiltshire, England, in the 1950s and 1960s. CS was used first on animals, then subsequently on British Army servicemen volunteers. CS has less effect on animals due to "under-developed tear-ducts and protection by fur"[8].

CS is synthesized by the reaction of 2-chlorobenzaldehyde and malononitrile via the Knoevenagel condensation:



ClC6H4CHO + H2C [CN]2 → ClC6H4CHC[CN]2 + H2O

The reaction is catalysed with weak base like piperidine or pyridine. The production method has not changed since the substance was discovered by Corson and Stoughton [9]. Other bases, solvent free methods and microwave promotion have been suggested to improve the production of the substance [10]. The physiological properties had been discovered already by the chemists first synthesising the compound in 1928: "Physiological Properties". Certain of these dinitriles have the effect of sneeze and tear gases. They are harmless when wet but to handle the dry powder is disastrous [9].

Many types of tear gases and other riot control agents have been produced with effects ranging from mild tearing of the eyes to immediate vomiting and prostration. CN and CS are the most widely used and known agents, but around 15 different types of tear gas have been developed worldwide e.g., adamsite or bromoacetone, CNB, and CNC. CS has become the most popular due to its strong effect and lack of toxicity in comparison with other similar chemical agents. The effect of CS on a person will depend on whether it is packaged as a solution or used as an aerosol. The size of solution droplets and the size of the CS particulates after evaporation are factors determining its effect on the human body [11].

The chemical reacts with moisture on the skin and in the eyes, causing a burning sensation and the immediate forceful and uncontrollable shutting of the eyes. Effects usually include tears streaming from the eyes, profuse coughing, exceptional nasal discharge that is full of mucus, burning in the eyes, eyelids, nose and throat areas, disorientation, dizziness and restricted breathing. It will also burn the skin where sweaty and/or sunburned. In highly concentrated doses, it can also induce severe coughing and vomiting. Almost all of the immediate effects wear off within an hour [such as exceptional nasal discharge and profuse coughing], although the feeling of burning and highly irritated skin may persist for hours. Affected clothing will need to be washed several times or discarded.

People or objects contaminated with CS gas can cause secondary exposure to others, including healthcare professionals and police. In addition, repeated exposure may cause sensitisation [12]. Although described as a non-lethal weapon for crowd control, studies have raised doubts about the classification of CS. As well as causing severe pulmonary damage, CS can also significantly damage the heart and liver [13].

On 28 September 2000, Prof. Dr. Uwe Heinrich released a study commissioned by John C. Danforth, of the United States Office of Special Counsel, to investigate the use of CS by the FBI at the Branch Davidians' Mount Carmel compound. He concluded that the lethality of CS used would have been determined mainly by two factors: whether gas masks were used and whether the occupants were trapped in a room. He suggests that if no gas masks were used and the occupants were trapped, then, "...there is a distinct possibility that this kind of CS exposure can significantly contribute to or even cause lethal effects [2].

At least one study has associated CS exposure with miscarriages.[13] This is consistent with its reported clastogenic effect [abnormal chromosome change] on mammalian cells.

In Israel, CS gas was reported to be the cause of death of three boy on 31 December 2010,[14] although the Israel Defense Forces have questioned the veracity of the report. Other reports [15] suggest the cause of death was in fact the impact of a high-velocity CS gas canister to the chest. In Egypt, CS gas was reported to be the cause of death of several protesters in Mohamed Mahmoud Street near Tahrir square during the November 2011 protests. The solvent in which CS is dissolved, methyl isobutyl ketone [MIBK], is classified as harmful by inhalation; irritating to the eyes and respiratory system; and repeated exposure may cause skin dryness or cracking [16].

CS is used in spray form by many police forces as a temporary incapacitant to subdue attackers or persons who are violently aggressive. Officers who are trained in the use and application of CS spray are routinely exposed to it as part of their training. Blank pistol cartridges carrying CS in powder form have been released to the public. These, when fired at relatively close ranges, fully expose the target to the effects of CS, and are employed as a potent defensive weapon in regions where blank firing pistols are legally permitted for such use[12]. Although predominantly used by police, it has also been used in criminal attacks in various countries [21].

Use of CS in war is prohibited under the terms of the Chemical Weapons Convention, signed by most nations in 1993 with all but 5 other nations signing between 1994 and 1997. The reasoning behind the prohibition is pragmatic: use of CS by one combatant could easily trigger retaliation with much more toxic chemical weapons such as nerve agents. Only 4 nations have not signed the Chemical Weapons Convention and are therefore unhindered by restrictions on the use of CS gas: Angola, Egypt, North Korea and Somalia. Domestic police use of CS is legal in many countries, as the Chemical Weapons Convention prohibits only military use [23, 24].

Tear gas, formally known as a lachrymatory agent or lachrymator [from lacrima meaning "tear" in Latin], is a chemical weapon that stimulates the corneal nerves in the eyes to cause tears, pain, vomiting, and even blindness. Common lachrymators include pepper spray

[OC gas], CS gas, CR gas, CN gas [phenacyl chloride], nonivamide, bromoacetone, xylyl bromide, syn-propanethial-S-oxide [from onions], and Mace [a branded mixture]. Lachrymatory agents are commonly used for riot control. Their use as chemical warfare agents is prohibited by various international treaties. During World War I, toxic lachrymatory agents were used increasingly.

Tear gas works by irritating mucous membranes in the eyes, nose, mouth and lungs, and causes crying, sneezing, coughing, difficulty breathing, pain in the eyes, and temporary blindness. With CS gas, symptoms of irritation typically appear after 20–60 seconds of exposure [1] and commonly resolve within 30 minutes of leaving [or being removed from] the area [2]. With pepper spray the onset of symptoms, including loss of motor control, is almost immediate [2]. There can be considerable variation in tolerance and response, according to the National Research Council [US] Committee on Toxicology [3].

The California Poison Control System analyzed 3,671 reports of pepper spray injuries between 2002 and 2011.[4] Severe symptoms requiring medical evaluation were found in 6.8% of people, with the most severe injuries to the eyes [54%], respiratory system [32%] and skin [18%]. The most severe injuries occurred in law enforcement training, intentionally incapacitating people, and law enforcement [whether of individuals or crowd control] [4]. Lachrymators are thought to act by attacking sulfhydryl functional groups in enzymes. One of the most probable protein targets is the TRPA1 ion channel that is expressed in sensory nerves [trigeminal nerve] of the eyes, nose, mouth and lungs.

As with all non-lethal, or less-than-lethal weapons, there is some risk of serious permanent injury or death when tear gas is used [5, 6]. This includes risks from being hit by tear gas cartridges, which include severe bruising, loss of eyesight, skull fracture, and even death [7]. A case of serious vascular injury from tear gas shells has also been reported from Iran, with high rates of associated nerve injury [44%] and amputation [17%], [8] as well as instances of head injuries in young people [9].

While the medical consequences of the gases themselves are typically limited to minor skin inflammation, delayed complications are also possible: people with pre-existing respiratory conditions such as asthma, who are particularly at risk, are likely to need medical attention[1] and may sometimes require hospitalization or even ventilation support [10]. Skin exposure to CS may cause chemical burns [11] or induce allergic contact dermatitis [1, 2]. When people are hit at close range or are severely exposed, eye injuries involving scarring of the cornea can lead to a permanent loss in visual acuity [12].

Use of tear gas in warfare [as all other chemical weapons] is prohibited by various international treaties [13] that most countries have signed. Police and private self-defense use is not banned in the same manner. Armed forces can legally use tear gas for drills [practicing with gas masks] and for riot control. First used in 1914, xylyl bromide was a popular tearing agent since it was easily brewed. The US Chemical Warfare Service developed tear gas grenades for use in riot control in 1919 [14].

Certain lachrymatory agents are often used by police to force compliance, most notably tear gas.[6] In some countries [e.g., Finland, Australia, and the United States], another common substance is mace. The self-defense weapon form of mace is based on pepper spray, and comes in small spray cans, and versions including CS are manufactured for police use [15] Xylyl bromide, CN and CS are the oldest of these agents, and CS is the most widely used. CN has the most recorded toxicity [1].

Typical manufacturer warnings on tear gas cartridges state "Danger: Do not fire directly at person[s]. Severe injury or death may result."[16]. Such warnings are not necessarily respected, and in some countries, disrespecting these warnings is routine. In the 2013 protests in Turkey, there were hundreds of injuries among protesters targeted with tear gas projectiles [23]. In the Israeli-occupied territories, Israeli soldiers have been routinely documented by Israeli human rights group in firing direct tear gas canisters at activists, some of which resulted in fatalities [17]. However, tear gas guns do not have a manual setting to adjust the range of fire. The only way to adjust the projectile's range is to aim towards the ground at the correct angle. Incorrect aim will send the capsules away from the targets, causing risk for non-targets instead.

A variety of protective equipment may be used, including gas masks and respirators. In riot control situations, protesters sometimes use equipment [aside from simple rags or clothing over the mouth] such as swimming goggles and adapted water bottles [20]. There is no effective antidote to common tear gases [1]. Getting clear of gas and into fresh air is the first line of action [1]. Once a person has been exposed, there is a variety of methods to remove as much chemical possible and relieve symptoms [1]. The standard first aid for burning solutions in the eye is irrigation [spraying or flushing out] with water, [21] and some evidence suggests that diphoterine [22] solution, a first aid product for chemical sprays, may help with ocular burns or chemicals in the eye [23].

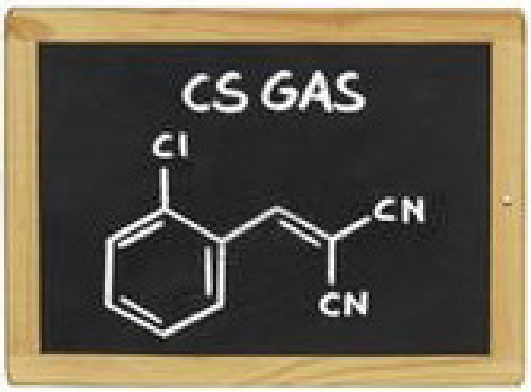


Fig. 1 The chemical structure of tear gas CS

The term "tear gas" is a misnomer. For one thing, "tear gas" seems to imply something innocuous you would think it's just a chemical that makes you tear up. In fact, tear gas is a dangerous, potentially lethal chemical agent which is outlawed under the Chemical Weapons Convention for use during wartime. As the Omega Research Foundation argues: "Less-lethal weapons are presented as more acceptable alternatives to guns; but these weapons augment rather than replace the more lethal weapons. Euphemistic labels are used to create the impression that these weapons represent soft and gentle forms of control. CS is never referred to by the authorities as vomit gas, in spite of its capacity to cause violent retching." NGO Physicians for Human Rights believes that 'tear gas' is a misnomer for a group of poisonous gases which, far from being innocuous, have serious acute and longer-term adverse effects on the health of significant numbers of those exposed." We aim to change the conversation on tear gas by calling this so-called "nonlethal" weapon what it is: a chemical weapon. We view tear gas, pepper spray, and all "lachrymatory agents" and so-called "non-lethal weapons" as chemical weapons in the war on democracy.

It's important to note that "tear gas" is not actually a gas. The active chemicals in all different kinds of tear gas and pepper spray are solid at room temperature, and need to be mixed with other chemicals in order to produce what is called an aerosol— solid particles finely dispersed in the air, similar to smoke or a cloud. They can also be dissolved in liquid solution, which is how pepper spray is commonly used. This is significant since the symptoms and treatment for tear gas and pepper spray exposure can vary depending on the kind of aerosolizing agents or solvents used. For example, when silica gel is added to CS to form CS1 or CS2, the result is a stronger tear gas which is more water resistant. Methylene chloride, a known carcinogen, was used as a solvent in the tear gas and pepper spray against WTO protesters in Seattle in 1999. This is believed to have caused many health problems for protesters who were exposed.

1.2. The history of chemical gas

As waves of popular uprising have spread across the globe, these disparate movements have all faced overwhelming repression from their

own police or military forces. Beyond a general sense of popular power, what unites these popular revolts more than anything else is the tool used to quell mass protests: tear gas. But perhaps what is most striking is that the same handful of tear gas manufacturers ship their gas to repressive regimes around the world.

Widely regarded as a "non-lethal" technology—despite the counter-factuals we have known for quite some time the appeal of tear gas to state security is its effectiveness for blanket, indiscriminate crowd control. With the ability to quickly transform a bustling city boulevard overflowing with political energy into a desolate no-man's land, it is no wonder that those who oppose popular demonstrations of political will turn to tear gas as a means to crush dissent.

As a result of the Arab uprisings, the state security market in the Middle East has ballooned into a multi-billion dollar industry. But the ones profiting most from the stifling of political expression are tear gas manufacturers, most of which are US-based [24]. In Egypt during late 2011, port workers in Suez took note of this and refused to unload a shipment of tear gas from Pennsylvania-based Combined Systems. Turkey, which came under criticism for excessive use of tear gas during the Diren Gezi movement of Summer 2013, reportedly imported 628 tons of teargas in the period from 2000 to 2012. Muammer Guler, who recently resigned as Interior Minister of Turkey, confirmed that during the Gezi protests Turkish police added tear gas to the water used in the water cannons on armored riot control vehicles [25].

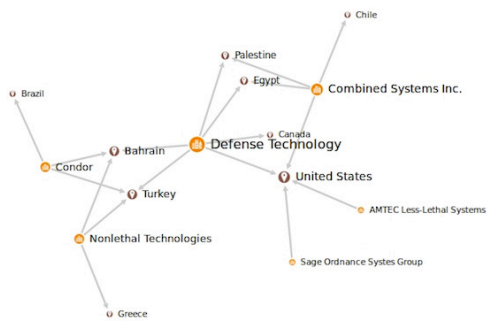


Fig. 2 A network graph showing tear gas manufacturers and the countries in which their products are used.

Chemical weapons have, for at least the last century, been viewed as a dishonorable and offensive kind of weapon [38]. However, chemical weapons of some sort have been part of warfare as far back as Thucydides, when "the Peloponnesians tried to reduce the town of Plataea with sulphur fumes in the fifth century BC." The first international agreement aimed at restricting their use took place at the Hague Conference of 1899, where certain attendees agreed "to abstain from the use of projectiles the sole object of which is the diffusion of asphyxiating or deleterious gas." The two most significant military powers to refuse the above provision were the U.S [39, 40]. and the U.K. By the outbreak of World War I, a more universal taboo against the use of chemical weapons began to take hold. In the Great War, German forces "handed the allies a propaganda coup" by being the first to use lethal chemical munitions [41]. This first-to-act status enabled their adversaries to blame Germany for "the initiation of 'frightfulness' [as gas warfare was dubbed]." It is important to note that some of the chemical weapons used in WWI were RCAs, including, achrymators [tearproducing agents] like chloroacetophenone [CN], along with vomiting agents." Initially, CN gas was developed for domestic law enforcement use in France [42, 43]. In fact, the first chemical munition brought to the front was a canister of CN gas carried by a French policeman [44, 45].

The inter-war period saw a proliferation of international institutions and conventions. Among these newly founded agreements was the Washington Treaty, championed by the U.S. The Washington Treaty established that "the use in war of asphyxiating, poisonous or other gases, and all analogous liquids, materials or devices" is prohibited. This agreement is notable in that it did not prohibit the stockpiling or development of chemical weapons––simply their use [44, 45]. Additionally, the U.S. did not consider RCAs "chemical weapons." The language of the Washington Treaty was reproduced in the 1925 Geneva Protocol, which the U.S. signed, though did not actually ratify until 1975 [46, 47].

During World War II, none of the belligerents used chemical weapons, though all maintained capabilities in the area. The reasons for the non-use of chemical weapons varied, but in part it was based on the fear of alienating neutral parties, fear of retaliation in kind, and the limited utility of chemical weapons in a fast-moving war. The next major use of chemical weapons came in Vietnam, where the U.S. used chemical defoliants to destroy ambush-friendly jungles and riot control agents, including ortho-chlorobenzylidene-malononitrile [CS], to force enemy combatants out of hiding in order to facilitate lethal targeting. The use of such chemicals in Vietnam stirred outrage in much of the international community and within the U.S. In response, the General Assembly of the United Nations in 1969 passed Resolution 2603A, "which purportedly gave its definitive interpretation of the [Geneva] Protocol to include tear gas." However, the status of tear gas, RCAs, and other chemical agents remained unresolved [47].

1.3. Pepper spray [OC]

Pepper spray, also known as OC spray [from "oleoresin capsicum"], OC gas, and capsicum spray, is a lachrymatory agent [a chemical compound that irritates the eyes to cause tears, pain, and temporary blindness] used in policing, riot control, crowd control, and personal self-defense, including defense against dogs and bears.[1][2] Its inflammatory effects cause the eyes to close, impairing vision. This temporary blindness allows officers to more easily restrain subjects and permits people using pepper spray for self-defense an opportunity to escape. Although considered a less-than-lethal agent, it has been deadly in rare cases, and concerns have been raised about a number of deaths for which pepper spray may have been a contributing factor.

The active ingredient in pepper spray is capsaicin, which is a chemical derived from the fruit of plants in the Capsicum genus, including chilis. Extraction of oleoresin capsicum from peppers requires capsicum to be finely ground, from which capsaicin is then extracted using an organic solvent such as ethanol. The solvent is then evaporated, and the remaining wax-like resin is the oleoresin capsicum. An emulsifier such as propylene glycol is used to suspend the OC in water, and pressurized to make it aerosol in pepper spray. The high performance liquid chromatography [HPLC] method is used to measure the amount of capsaicin and major capsaicinoids within pepper sprays.

Determining the strength of different manufactures of pepper sprays can be confusing and difficult. Statements a company makes about their product strength are not regulated. A method using the Capsaicin and Related Capsaicinoids [CRC] content of the product is unreliable as well, because there are 6 different types of Capsaicinoids, varying in different levels of heat [Capsaicin], which manufacturers do not state which particular type of Capsaicinoids are used. Personal pepper sprays can range from a low of 0.18% to a high of 3%. Most law enforcement pepper sprays use between 1.3% and 2%. The federal government of the United States has determined that Bear Attack Deterrent Sprays must contain at least 1.0% and not more than 2% CRC. CRC does not measure the amount of Oleoresin Capsicum [OC] within the formulation. Instead, CRC is the heat bearing and pain producing components of the OC.

The federal government of the United States makes no mention of SHU [Scoville heat units] or OC in their requirements, only CRC [only for Bear Attack Deterrent Sprays]. But, there are countries [Italy, Portugal and Spain - see below, under "Legality"] and a few states within the US [Michigan and Wisconsin with a 10% OC limit] that do mention OC limitations. Some manufacturers may show a very high percentage of OC [Oleoresin Capsicum] and, although OC is the active ingredient within the formulation, it does not indicate pepper spray strength. High OC percentage also indicates that a spray has more oil content; which, can possibly use lower grade pepper oils [but, more of it], or lower grade Capssaicinoids [within the Major CRC] and also has less ability to soak and penetrate skin than a formula with a less, but higher-quality, pepper oil, because oil has hydrophobic properties.

The OC percentage only measures the amount of peppers contained in the defense spray, not the strength, pungency or effectiveness of the product. Other companies may show a high SHU. The SHU is measured at the base resin and not by what comes out of the aerosol. The rated high heat of the resin may be diluted down depending on how much of it is put in the can. There are several counterparts of pepper spray developed and legal to possess in some countries for example Brazil, Russia and United Kingdom.

Pepper spray is an inflammatory agent which causes immediate closing of the eyes, difficulty breathing, runny nose, and coughing [3]. The duration of its effects depends on the strength of the spray but the average full effect lasts around thirty to forty-five minutes, with diminished effects lasting for hours. In 1998, The European Parliament Scientific and Technological Options Assessment [STOA] published "An Appraisal of Technologies of Political Control"[5] with extensive information on pepper spray and tear gas. They write: The effects of pepper spray are far more severe, including temporary blindness which lasts from 15–30 minutes, a burning sensation of the skin which lasts from 45 to 60 minutes, upper body spasms which force a person to bend forward and uncontrollable coughing making it difficult to breathe or speak for between 3 to 15 minutes.

For those with asthma, taking other drugs, or subject to restraining techniques that restrict the breathing passages, there is a risk of death. The Los Angeles Times reported in 1995 at least 61 deaths associated with police use of pepper spray since 1990 in the USA [30]. The American Civil Liberties Union [ACLU] documented 27 people in police custody who died after exposure to pepper spray in California since 1993 [7]. However, the ACLU report counts any death occurring within hours of exposure to pepper spray. In all 27 cases, the coroners' report listed other factors as the primary cause of death, though in some cases the use of pepper spray may have been a contributing factor [27].

In a 1993 Aberdeen Proving Ground study, the US Army concluded that pepper spray could cause mutagenic and carcinogenic effects, sensitization, cardiovascular, neurological and pulmonary toxicity, , as well as possible human fatalities. There is a risk in using this product on a large and varied population"[10]. However, the pepper spray was widely approved in the US despite the reservations of the US military scientists after it passed FBI tests in 1991. As of 1999, it was in use by more than 2,000 public safety agencies [11].

Special Agent Thomas W. W. Ward, the head of the FBI's Less-Than-Lethal Weapons Program at the time of the 1991 study, was fired by the FBI and sentenced to two months in prison for receiving payments from a pepper gas manufacturer while conducting and authoring the FBI study that eventually approved pepper spray for FBI use. Prosecutors said that from December 1989 through 1990, Ward received about $5,000 a month for a total of $57,500, from Luckey Police Products, a Fort Lauderdale, Florida-based company that was a major producer and supplier of pepper spray. The payments were paid through a Florida company owned by Ward's wife [14].

Pepper spray has been associated with positional asphyxiation of individuals in police custody. There is much debate over the actual "cause" of death in these cases. There have been few controlled clinical studies of the human health effects of pepper spray marketed for police use, and those studies are contradictory. Some studies have found no harmful effects beyond the aforementioned effects [15].

Direct close-range spray can cause more serious eye irritation by attacking the cornea with a concentrated stream of liquid [the so-called "hydraulic needle" effect]. Some brands have addressed this problem by means of an elliptically cone-shaped spray pattern.

For individuals not previously exposed to OC effects, the general feelings after being sprayed can be best likened to being "set alight." The initial reaction should the spray be directed at the face, is the completely involuntary closing of the eyes [sometimes described as leading to a disconcerting sensation of the eyelids "bubbling and boiling" as the chemical acts on the skin], an instant sensation of the restriction of the airways and the general feeling of sudden and intense, searing pain about the face, nose, and throat. Coughing almost always follows the initial spray. Subsequent breaths through the nose or mouth lead to ingestion of the chemical, which feeds the feeling of choking. Police are trained to repeatedly instruct targets to "breathe normally" if they complain of difficulty, as the shock of the exposure can generate considerable panic as opposed to actual physical symptom.

Capsaicin is not soluble in water, and even large volumes of water will not wash it off. In general, victims are encouraged to blink vigorously in order to encourage tears, which will help flush the irritant from the eyes.

A formal study of five often-recommended treatments for skin pain [Maalox, 2% lidocaine gel, baby shampoo, milk, or water concluded that there is no significant difference in pain relief provided by five different treatment regimens. Time after exposure appeared to be the best predictor for decrease in pain [28]. To avoid rubbing the spray into the skin, thereby prolonging the burning sensation, and, in order to not spread the compound to other parts of the body, victims should try to avoid touching affected areas. There are also wipes manufactured for the express purpose of serving to decontaminate someone having received a dose of pepper spray. Many ambulance services and emergency departments use baby shampoo to remove the spray which has been reported to be generally of good effects. Some of the OC and CS will remain in the respiratory system, but the recovery of vision and the coordination of the eyes can be expected within 7 to 15 minutes [19].

Some "triple-action" pepper sprays also contain "tear gas" [CS gas], which can be neutralized with sodium metabisulfite [Campden tablets, used in home brewing], though it is not water-soluble either and must be washed off using the same procedure as for pepper spray.

2. Methods

A community medicine specialist and an expert with bachelor degree performed the literature search. They searched English and Farsi databases including MEDLINE, ISI and Scopus and Iranian databases including Iran Medex and Iran doc. The keywords were chemical gas, pepper spray and tear gases in the two languages. The titles and abstracts were evaluated and those with irrelevant base on both topics were excluded. The full texts of other articles were assessed according to the project goals. No specific evaluation was conducted on the quality of the reviewed manuscripts and their publication in accredited journals [according to The Commission for Accreditation and Improvement of Medical Journals affiliated to Iranian Ministry of Health & Medical Education]. Most of the evidences used were in the first 4 levels of 7 defined levels for evaluation of documents. In other words, the included articles were randomized controlled trials, cohort and historical cohort, case – control, case series and case reports and correlational studies [4, 5].

3. Results

We found 100 articles in regard to chemical warfare against Iranian people which were published in approved medical journals. Most of these articles focused on the effects and treatment of tear gas complications. We collected the information and concluded from performed investigations and presented a preventive guideline containing 5 parts about 5 stages [before, at the time, and after the incident and also on early and late biological effects of the victims].

3.1. How does tear gas work?

Typical RCAs [Riot Control Agents] such as tear gas are delivered by either sprays or grenade canisters fired from baton guns. The canisters themselves can be hazardous as they usually generate a lot of heat and will cause nasty burns. If they are fired at close range, they can cause serious damage to the body and even result in death [41,42].

When chemicals used in tear gas react with moisture, they cause a burning sensation, meaning that the eyes, skin and lungs are extremely susceptible. Oil-based creams, sunscreens and make-up will also absorb tear gas and should not be worn in occasions where they might be used. Tear gas attacks the lungs, so those suffering from any respiratory diseases, including asthma should seriously consider the potentially dangerous effects this may have on their condition [45].

Streaming and burning of eyelids and throat as well as excessive coughing are all reactions to tear gas. An excessive amount of mucus

coming from the nose, eyelids and throat is also common. People often report that they feel disorientated and dizzy just after breathing it in. The effects usually wear off within an hour, although the feeling of burning and highly irritated skin may persist for hours [40, 41, 42].

3.2. Preventive points

Preventive measures before the incident are as follows:

To provide the necessary infra-structures such as:

Strengthening the hardware and software facilities for rapid health-related reactions; Prediction of required preventive equipment and devices in the stocks of passive defense organization and update them with a checklist periodically; Designing and manufacturing the standard protective equipment against chemical agents in the factories throughout the country; Preparation of the new standard containers equipped with experienced trained personnel and portable emergency defense sites particularly for washing and decontaminating the victims [the current checklist should be revised];

Educating people, especially military and passive defense forces properly. The content of such training can be focused on early detection of chemical attacks signs, the first necessary critical measures, self-protection, properly transferring the injured victims, patient resuscitation and communicating with agencies and authorities for coordinated actions. It should be noticed that people should not be exposed to unnecessary distress during these educations; Strengthening the passive defense scientific network; Implementing effective training exercises and periodic organized educational maneuvers particularly for passive defense volunteers and military forces;

Some researchers have used calcium chloride and magnesium oxide powder as anti-gas powder for skin exposures;

Use of the standard protective devices, particularly standard masks and wind wards; Ghasemi Boroumand et al., [2010] in a descriptive study conducted on 189 selected male victims from 6 provinces in Iran, evaluated the protective effects of both wind wards and masks in preventing ocular and pulmonary complications. They stated that the use of protective equipment [masks and wind wards] reduced the severity of lung and eye lesions. Namely, when the using rate of the protective equipment rose, severity of ocular and pulmonary lesions reduced significantly [11].

Gas masks [often called a respirator] are the best tool to protect from the chemical gases. A gas mask consists of a rubber mask with a canister and filter fitted to the side. It is fitted to the size and shape of your face, and you should not assume that yours will fit someone else. Ensure you have a spare canister, as they do need changing after several hours [this depends on the make and model of the gas mask as well as how long it has been used].

Those who already have a gas mask should make sure it is working properly and is correctly fitted. Any masks purchased online or in military surplus stores should be checked by an expert to ensure they work correctly. The next best thing after a gas mask is an escape hood, which is cheaper and is not subject to the same export rules. You can also use a builder's respirator that covers your nose and mouth – but make sure that you use appropriate filters. Failing that, a dust mask for building and airtight goggles will provide some degree of protection.

If only a gas mask, or a mask and goggles are available, they should be used. This might enable the user to continue working in the gas. However body and clothes decontamination are still needed.

If no protection is available, mouth and nose should be covered using a handkerchief or cloth or the inside of the coat to protect the airway [the outside of your jacket is likely to be contaminated].

Standing in the fresh air allows the breeze to carry away the CS gas.

Keeping both arms outstretched would help CS gas to come off the clothing.

As most RCAs are heavier than air and the highest concentrations tend to sit nearer to the ground, getting to higher grounds is recommended.

It should be remembered that the gas will impregnate clothing for many months, so any clothing that may have been contaminated should be immediately washed several times or discarded.

Any exposed skin should be washed with soap and water. Showering firstly in cold water, then warm water should be considered. However, bathing should be avoided.

Rubbing eyes or face should be avoided or this will reactivate any crystals.

3.3. Use of the fine and thin texture and if possible, plastic clothes

According to published researches, mustard gas can penetrate ordinary or even leather clothing and thus, after a few minutes can reach the body tissues. This is while the rubber sheath can, at least for a few hours, protect the body. Also this agent can percolate from ordinary and plastic masks [12].

3.4. Going to a high altitude area

Because tear gases are heavier than air, at the time of release, victims should climb to a height of at least 10 meters above the ground in the attacked area [18]. This comment also was recommended by Iranian researchers [75, 76, 77]. Removal of clothes as soon as possible: Sulfur mustard may remain in the liquid form on contaminated clothing and other devices for many hours or even days and it may affect the biological tissues [24, 25]. Therefore, when exposure occurs, all contaminated clothes should be removed from the body in the shortest possible time and should be destroyed. Plastic gloves can be used to remove the clothing. Rescuers and medical personnel are at risk of adverse effects, especially for skin blistering, if their bodies or their clothes come in contact with contaminated victims [20, 21].

3.5. Immediate body wash

Affected people should wash their body with plenty of fresh and clean water as soon as possible. During chemical attacks on Iran, some of the Iranian victims had washed their hands and faces by the water available in the area, while they were not aware that the water was contaminated by the SM toxin. This was a reason for eye and skin problems in these victims. Thus, water contamination should be considered before using it for eye and skin irrigation [16]. In these conditions, using mobile tanks or vehicles carrying clean water and showers will be very useful. Also, field centers equipped with healthy water should be established at the nearest safe place for treatment and rehabilitation facilities around the affected areas. Washing the skin with 0.5% household bleach is also useful [10].

3.6. Transport the injured people

With usage of adequate protective equipment, injured people should be transferred to areas with humid climates [17].

3.7. Post preventive measures after the incident

Decontamination of the area

To reduce environmental pollution, Calcium hypochloride, stilbestrol or permanganate can be used to decontaminate the polluted areas [10, 11].

3.8. Protective measures for residence in contaminated area

The environmental sustainability of sulfur mustard is high. Hence, the agent is able to remain in soil for at least 10 years [17] and it can persist in the clothes and be active in soil even for months at low temperatures. It can be found with the concentrations of 1 to 25 milligrams per cubic meter in 6 to 12 inches in the soil around the affected zones. In addition, on the basis of the available researches, people who live in polluted areas, even with no obvious symptoms at the time of exposure, may eventually develop mustard-induced complications, especially pulmonary complications [18]. Therefore, residence in high traffic areas should be prohibited in coming to the polluted area, until complete decontamination of area is performed.

3.9. Early preventive measures for injured people

In cases of severe acute respiratory problems, a pseudo-membrane may form in the upper respiratory tract which may cause laryngospasm and stridor. This complication may lead to asphyxia and death. For prevention of death, an urgent tracheostomy and immediate treatment in the ICU might be required [19].

After chemical attacks, even exposed people without symptoms should irrigate their eyes for 5 - 15 minutes with copious amounts of healthy water, as soon as possible [9,10,15]. Solutions other than clean water that are recommended for washing the eyes include: normal saline, sodium bicarbonate solution 1.5%, Dichloramine T 0.5%, sodium sulfate or magnesium sulfate, and zinc or boric acid [20-22]. Also, diluted infant shampoo has shown to be useful for eye decontamination [9]. Application of topical anesthetic eye drops should be avoided for both healthy and damaged corneas [23].

Local steroids should also be avoided except in the presence of chemosis and epithelial edema [23]. Pads and bandages should not be used for eye lesions, as the toxic effects of sulfur mustard may exacerbate its effect due to raised temperature in the injured eye leading to ocular lesions [21]. In the case of skin exposure, initially, calcium chloride or magnesium oxide powder as the anti-gas agents should be used immediately on the exposed areas of skin followed by washing with soap and water [20]. In case of gastrointestinal [GI] involvement, emesis should not be induced. After feeding 100 to 200 ml of milk, gastric lavage would be indicated. Activated charcoal is not of proven efficacy but is not contraindicated either [9].

3.10. Post preventive measures for injured people

Acute effects of sulfur mustard-induced lesions gradually turn into the chronic phase. In this phase, our efforts should be focused on preventing from further complications. For this purpose, the following points are suggested: In the late phase, scarring and stenosis of the airways may occur. In these cases, removing debris by bronchoscopic maneuvers would be very useful and life-saving [24]. In the treatment of chronic lesions caused by sulfur mustard, corticosteroids are widely used. The long-term use of these drugs may cause undesirable effects such as growth inhibition, diabetes, muscle atrophy, osteoporosis, salt retention, dementia and opportunistic infections. Therefore, during the application of these medications, the injured victims should be made aware of these complications [35]. More than two-thirds of the chemical veterans with chronic bronchiolitis are overweight or obese. These patients should reduce their weights to prevent superimposing complications [46]

Treatment of magnesium deficiency in sulfur mustard induced asthmatic patients can decrease the side effects of asthma [37]. Some of the common medications used in lung diseases such as Theophylline have negative impact on the quality of sleep for the victims [58]. Therefore, such drugs should be substituted with other appropriate medications. In patients with photophobia, using dark sunglasses is recommended [59].

The use of petroleum jelly to prevent sticking of the eyelid edges is useful. To prevent corneal perforation, victims with the mustard eye injuries should not stay in hot and dry areas and use artificial tears. In addition, exposed people should avoid jobs such as sewing and driving for long hours since these conditions exacerbate the dryness of the eyes and increases the risk of corneal perforation [29].

Some complications such as COPD, pruritus, visual problems and mental disorders affect the quality of life in exposed people. In addition, quality of life in victims who exercise improves compared to those who are not active enough [60, 61, 62]. Depression is very common among the victims and the most important complication is suicide which could be prevented to some extent. Tavallai et al., in a retrospective study conducted on 1463 deaths among the chemical victims, investigated the causes of suicide [62, 63]. The route of suicide was self-hanging, intentional self-poisoning, suffocation and use of firearms. These researchers stated that suicide is one of the causes of death among the victims which mostly occurs at younger ages [less than 40 years] [64]. Therefore, in order to prevent the suicide in victims with chemical injuries, especially those suffering from depression, they should be monitored regularly. Strengthening religious behaviors, patriotism and social supports are useful in prevention of wide variety of the mental complications [65, 66].

4. Discussion

Unfortunately, most studied articles have emphasized on diagnostic and therapeutic implications in chemical victims, with little preventive measures to recommend. Centers for disease control and prevention [CDC] in the United States has emphasized on immediate departure from the area where the sulfur mustard is released, sealing the contaminated clothing in a plastic [Polyethylene] bag, and then keeping that bag inside another plastic bag, going to a higher ground, removing the clothes, immediate washing of the body [particularly skin and eyes], not using bandages for eye lesions, using dark glasses, and not to induce vomiting in GI involvement [67, 68]. All these recommendations are compatible with the aforementioned points in conducted studies. In addition, disposable clothing kits should be available [69]. According to Iranian reports, there were no such disposable clothes available to the victims. Cutting off contaminated hair is recommended, too [70], but there were not any reports regarding this in Iranian reports. Polk County Health Department has emphasized on removing the shoes, and even the contact lenses [71], but similarly, there were not any recommendations for these points in considered studies. According to published articles, during chemical attacks to Iran, contaminated clothes were burnt in some medical centers. Nevertheless, while the fire may destroy the agent, breathing the fumes is very dangerous and contact of the agent with liquid or vapor may be fatal. Thus, burning the material should be avoided [72].

Iranian researchers emphasized on transportation of the victims to an area with humid climates [72]. In CAMEO [Computer Aided Management of Emergency Operations] chemicals software there has been emphasis on the movement of the victims to fresh air area, as soon as possible [73]. Ghasemi Boroumand et al. pointed the mask as a preventive tool. Moreover, Zarchi et al., in a retrospective cohort study conducted on 1337 Iranian victims with a history of mustard gas exposure, estimated that the risk of pulmonary complications were increased among those not having worn masks [70]. These researchers have not mentioned the specific type of the masks required. In encyclopedia Britannica, a typical gas mask for protection of sulfur mustard toxicity is described as having a tightfitting face piece equipped with filters, an exhalation valve, and transparent eye pieces [67]. Based on papers, probably the masks used in Ghasemi's study were ordinary masks and lacked the essential specifications. According to the fact sheets on Chemical and Biological Warfare Agents report, masks alone do not provide adequate protection against sulfur mustard [68]. The most useful preventive recommendations suggested by Iranian researchers are the points for preventing the exacerbation of sulfur mustard-induced chronic complications.

5. Conclusion

This is the first systematic review in medical literature aiming to evaluate the health hazards of CS which is used for both riot control and military/police training. A significant function of a systematic review is the establishment of further research needs. In this review, we assembled and discussed 39 studies. The majority of them were case reports and there were few descriptive studies and only one analytical study. It is of note that the analytical study revealed long term clinical effects with Attack Rates ranged from 25%–30%. Also a considerable part of case reports failed to include essential information [e.g., latency period or duration of symptoms]. Moreover, long term and life threatening health effects have been recorded. Police officers, demonstrators, bystanders, health care workers and surgical patients could be harmed from exposure to CS. The establishment of surveillance schemes for the registration of the health effects and conditions of exposure among subjects exposed to CS and the completion of cohort studies among exposed populations [e.g., police officers, demonstrators, health care workers] would further illuminate the full health consequences of exposure to CS.

Performed studies on chemical gases in Iran are mainly focused on tear gas and treatment of induced complications. Although the issue of prevention is very important, the literature related to this topic was limited to scattered facts within published papers. It is suggested that more research is needed in relation to preventive measures against sulfur mustard attacks.

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Research Paper | Medical Sciences

Knowledge Regarding Foreign Body Aspiration Among Mothers of Under Five Children in A Selected Rural Community in Mangalore With A View To Give Health Education

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ABSTRACT

Foreign body aspiration is the fourth leading accidental cause of death for children under six years of age. Foreign body aspiration is a life-threatening emergency and needs urgent intervention. Foreign body aspiration claims thousands of lives each year, because they rarely reach in time for intervention [1]. Materials and methods: A descriptive approach was used for the present study. The participants were about 1 i50 in number and purposive sampling technique was used. Data was collected by administering a structured knowledge questionnaire. Results: The results showed that 52.7% of mothers had an good level of knowledge about Foreign Body Aspiration (FBA), 32.6% and 14.7% of them had v. good and average level of knowledge regarding FBA . Conclusion: Mothers had good knowledge regarding causes of Foreign Body Aspiration.

KEYWORDS : Knowledge of mother, Foreign body aspiration, Under five children.

INTRODUCTION

Foreign Body Aspiration (FBA) is a frequent cause of accidental death in children below the age of 6 years all over the world. It is considered a true emergency in the pediatric age group and leads up to 300 deaths per year in the USA. A large number (42%) of FBAs in the tracheo bronchial tree occur in the Indian sub-continent. Educational campaigns as a public health measure in some countries have brought down the incidence of FBA as well as the associated mortality [2]. Approximately 80 percent of pediatric FBA episodes occur in children younger than three years. At this age, most children are able to stand, are apt to explore their world via the oral route, and have the fine motor skills to put a small object into their mouths, but they do not yet have molars to chew food adequately. Additional predisposing factors to FBA in this age group include access to improper foods or small objects, activity while eating, and older siblings (who may place food or objects into the mouths of infants or toddlers). Young children are also particularly vulnerable to FBA because of the smaller diameter of their airway, which is prone to obstruction .In older children and adults, neurologic disorders, loss of consciousness, and alcohol or sedative abuse predispose to FBA [3].

Objectives

- To assess the level of knowledge regarding foreign body aspiration among mothers of under-five children.
- To determine the association of knowledge of mother's of under-five children regarding foreign body aspiration with selected demographic variables.

MATERIALS AND METHODS:

- Setting: The study was conducted in a rural community in Mangalore
- Research approach: The approach used for this study was descriptive survey approach.
- Research design: Descriptive survey design

Sample: 150 mothers of under five children who resides in a rural community.

- Sampling technique: purposive sampling method.
- Inclusion criteria:
- Mothers of under-five children,
  - Who can understand and speak either Kannada or English
- Exclusion criteria
  Mothers of under-five children,
  - Who are physically and psychologically unfit during the time of data collection
  - Who have participated in any research studies on FBA within the last 6 months
- Data collection instruments:
  - Structured knowledge questionnaire
  - Demographic proforma
- Description of tool:

The tool consisted of two aspects:

Section 1: It is comprised of Baseline proforma with age, education, occupation, number of children, type of family, religion, previous knowledge and source of information of the mother.

Section 2: Structured knowledge questionnaire on Foreign Body Aspiration that include questions regarding meaning and causes, clinical features, management and prevention.

Data collection procedure:

The investigator obtained formal permission from the authority before the study and informed consent was taken from subjects. Purposive sampling technique was used. Data was collected through a structured knowledge questionnaire for assessing the level of knowledge regarding Foreign Body Aspiration. Immediately after collecting data, the level of knowledge of mothers was assessed through data analysis, and health education was given for those who had average knowledge regarding Foreign Body Aspiration.

Major findings of the study:

The data was analyzed and presented under the following heading:

Section 1: Frequency and percentage distribution of sample characteristics.

Data shows that majority of subjects (32%) are 26-30 years old and 6% are below 20 years.

Data shows that majority of subjects (41.3%) are have secondary education and 1.4% belongs to diploma education.

Data shows that most of the subjects (61.3%) are unemployed and 4.6% are unskilled workers.

Data shows that 44.6% of subjects have two children and only 4.7% of subjects have more than 3 children.

Data shows that 59.3% of subjects are belongs to nuclear family where as 40.7% belongs to joint family.

Data depicts that the subjects were distributed as 52% Hindu 44.7% Muslim and 3.3% Christian.

Data shows that 51.4% has previous information were as 48.6% have no previous information about foreign body aspiration.

Data shows that the majority (51%) of subjects got information from family and 9% got from media.

Section 2: knowledge of mothers on Foreign Body Aspiration.

Figure-1

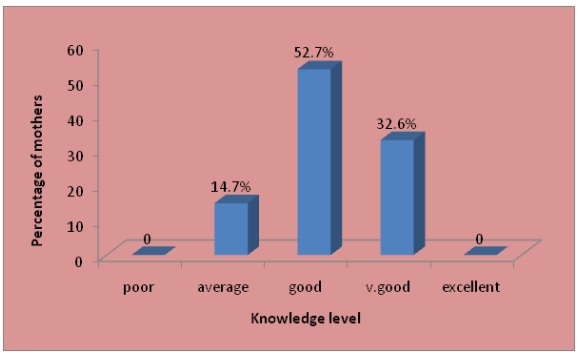

Figure-1 shows that majority of the mothers 52.7% of them had good level of knowledge about FBA, whereas 32.6% belongs to very good knowledge level but 14.7% are in the category of average level of knowledge. None of them belonged to excellent and poor category of knowledge.

Section 3: Domain wise distribution of knowledge
Table 1 & : Domain wise distribution of knowledge scores of mother's of under-five children on foreign body aspiration.

Table 1: Domain wise distribution of knowledge scores of mother's of under-five children on foreign body aspiration.

Sl No.	Domain of knowledge	Max. score	Range	Mean±S. D	Mean %
1	Meaning & causes	4	1-4	3.3±0.85	82.5%
2	Clinical features	2	0-2	1.37±0.68	68.5%
3	Management	7	1-6	3.33±1.11	47.5%
4	Prevention	9	3-9	6.55±0.95	72.7%

Figure 2

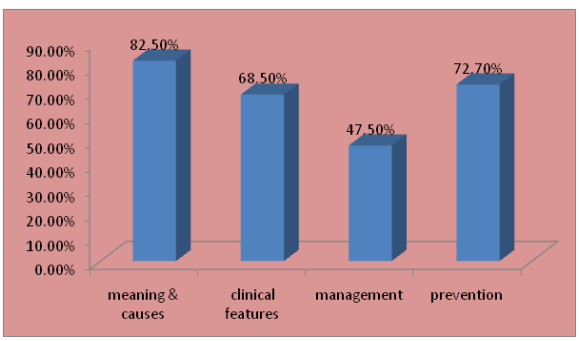

Table 1 reveals that samples had (82.5%) knowledge regarding meaning and causes of foreign body aspiration and had (72.7%) knowledge regarding prevention and had (68.5%) knowledge regarding clinical features where as the samples had only (47.5%) knowledge regarding management of Foreign Body Aspiration..

Section 4: Association of knowledge regarding foreign body aspiration with selected demographic variables.

There was significant association between the level of knowledge among mothers of under five children and occupation of the mother and number of children.

Discussion

From this study it is evident that it is an urgent need to educate mothers with the preventive measures and management of foreign body aspiration to minimize the risk of FBA. Health education was given to 22 mothers who were having average knowledge regarding foreign body aspiration.

A similar study was conducted to evaluate the level of awareness of foreign body aspiration and its resultant dangers in the community by the Department of Community Health of CMC Hospital Ludhiana, Punjab. About 63 primary care givers were interviewed about their awareness of foreign body aspiration according to an agreed protocol. The results revealed that awareness levels about the condition were very low, 25 % had not heard about the condition, 46% could not recognize if it happened and also 76% did not know about the attendant dangers of condition. The researcher concluded that there is a need to spread awareness about both prevention and treatment of this morbid condition [4].

Limitations

The study was limited to a selected rural community area of Surathkal in Mangalore.

The study was limited to only mothers of under-five children.

Recommendation:

In light of the findings of the current study, the following recommendations were suggested:

It is essential to provide information for mothers about all expected types of aspiration that might occur for their own children.

Education programs should be developed to help pediatric nurses to emphasize on care taking and safety measures for mothers. The high activity level of infants, toddlers, preschoolers and elementary school aged children, increases the risk of aspiration in many settings such as homes, schools, and day care centers. Steps should be taken by all caretakers to prevent the occurrence of such incidents.

Continuous training of mothers having children from less than one year to less than five years in such a way to secure their role toward foreign body aspiration management is highly recommended.

Conclusion:

Foreign body aspiration is a life-threatening emergency and needs urgent intervention. Foreign body aspiration claims thousands of lives each year, because they rarely reach in time for intervention. Mother's knowledge regarding the care of children with FBA is very essential in reducing mortality and preventing complications. It is the responsibility of nursing personnel to update the knowledge of mothers about foreign body aspiration.

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Research Paper History

Contribution of Dineshchandra Sen (1866-1939) in Bengal Historiography

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ABSTRACT

The reconstruction of the history of Bengali language and literature was closely linked with the reconstruction of the history of Bengal, especially of the ancient period. Dineshchandra Sen made a great effort to understand the life of the Bengali people as it was reflected in the Bengali literature through his different works. Although he was not the pioneer in the field, but his credit was systematic presentation of the previously available data as well as collection of the new. The periodization of growth the Bengali language and literature provide a scope to the historians to understand the evolution of Bengali culture. Despite various limitations, Dineshchandra showed a way to could be followed by scholars aspiring to reconstruct a total history of the Bengali people.

KEYWORDS : historiography, periodization, Hindu College, Asiatic Society of Bengal.

In the historiography of ancient Bengal the history of literature of Bengal gradually acquired for itself a position of significance. Because, those who engaged themselves in reconstructing the history of literature attempted to trace as far as possible the history of the people reflected in the literature of Bengal. In fact, behind the vicissitudes of political fortune he wanted to probe into "the inner life, the thoughts, the feelings, the real life of Bengal." An investigation on this line was undertaken by Dineshchandra Sen, when he had decided to publish *Baṅgabhāṣā O Sāhitya* on the basis of a large number of manuscripts collected by him from different parts of Bengal. He took great pains for six years to complete the work and published it in 1896 [1].

The effort of Dineshchandra Sen for reconstructing the history of Bengali language and literature was not the first of its kind. In 1774, Nathanial Brassy Halhed published *A Grammar of the Bengali Language* that contained some illustrations from the *Rāmāyaṇa*, the *Mahābhārata* and the *Annadāmaṅgal*. Kashiprasad Ghosh, a brilliant student of **Hindu College**, wrote in 1830, in *The Literary Gazette* (January 2) edited by Rev. James Long an article entitled 'On Bengali Works and Writers'. From 1853 to 1855 Isvaragupta published in his *Saṃvād Prabhākar* 'The Biographic Accounts and Works of Eighteenth Century *Kavis* and *Kaviwālās*'. Harimohan Mukhopadhyay wrote in 1869 the *Kavicharita*, volume I, containing discussions on Kṛttivās, Mukundarām, Kāśīrām Dās, Rāmprasād Sen, Mādhabmohan Tarkālaṅkār and Iśvarchandra Gupta. In 1871, Mahendranath Chattopadhyay wrote *Baṅgabhāṣār Itihāsa*, volume I (A History of Bengali Language). In the same year Bankimchandra wrote in *The Calcutta Review* an article entitled 'Bengali Literature' [2]. Ramgati Nayaratna wrote in 1872 for the first time a systematic history of Bengali language and literature [3]. He divided the entire history of literature into three periods, namely,

Ancient Period or Pre-Chaitanya Period;

Medieval Period, that is, pre-Bharatchandra period beginning from the time of Chaitanya;

Modern Period extending from Bharatchandra to Bankimchandra.

Rajnarain Vasu wrote in 1878 the history of Bengali language and literature depending on Ramgati Nyayaratna's work and Long's *Descriptive Catalogue* [4]. In 1877 was published Rameshchandra Dutt's famous work *The Literature of Bengal*. In this work we may trace a keen sense of history combined with a sharp insight into the mentality of the Bengali people [5]. Therefore, it may be reasonably held that while Ramgati Nayaratna introduced a periodization in the history of the Bengali literature, Rameshchandra Dutt initiated the process of utilising Bengali literature for exploring the history of culture of the Bengali people. Those two trends seem to have been combined by Dineshchsndra Sen in his *Baṅgabhāṣā O Sāhitya* (1896).

Rabindranath Tagore wrote in 1901 a critical appreciation of the second edition of Dineshchandra's work and stated thus:

"We have found in Dineshbaboos's book the shadow of a gigantic tree of history (itihāsa vanaspati) of Bengal with its different branches and sub-branches.[6]"

In fact, it was Dineshchandra who synthesised the results obtained previously by fragmentary attempts to reconstruct a comprehensive history of Bengali literature. Dineshchandra Sen's work is characterised by collection of a lot of information and facts, systematic presentation on the basis of periodisation and deep insight into the mind of the Bengali people. In this work he has sought assistance from the **Asiatic Society of Bengal** and Haraprasad Sastri [7]. Most of the contemporary scholars witnessed with great interest the process of making history of Bengali literature mainly through field-survey and collection of manuscripts in the districts like Tippera and Chattagrama [8].

The periodisation in the history of Bengali literature as followed by Dineshchandra Sen indicated, firstly, the Hindu-Buddhist age, secondly, the age of Chaitanya, thirdly, the age of Reforms, fourthly, the age of Krishnachandra and lastly, the age of the British. Rameshchandra Dutt's periodisation was thus: the age of Lyric and Poems, the age of Sanskrit influence and the age of Western influence. In comparison with the previous scholars' periodisation Dineshchandra Sen's planning of the period appears to be more meaningful and comprehensive, although the shortcomings in it was pointed out by later historians like Sunitikumar Chattopadhyay and Sukumar Sen [9].

Prabodhchandra Bagchi [10] in an appendix to the eighth edition to the *Baṅgabhāṣā O Sāhitya* pointed out the following:

Whatever has been said about the interrelation between the *Prākṛt* language and Bengali requires revision. Because, Bengali language originated from the *Prācya* or the eastern *Apabhraṃśa* which was again derived from *Prācya* or *Māgadhī Prākṛt*.

No mention has been made of the Buddhist *Charyāpadas* representing the earliest form of the Bengali language. When the first edition of *Baṅgabhāṣā O Sāhitya* was published, the *Charyāpadas* were not yet discovered. But in later editions, a discussion on the *Charyāpadas* might have been incorporated.

Whatever has been said about *Śūṇyapurāṇa* appears to be based on facts furnished by Nagendranath Vasu and Haraprasad Sastri. After the discovery of many manuscripts it has been found out that there was actually no work entitled *Śūṇyapurāṇa*. The work was actually *Dharmapūjāpaddhati* written in the fifteenth-sixteenth century by the priests of Dharmaṭhākur and not by the person named Ramāiṇḍit.

In order to determine the exact date of the Nāth literature, the discovery of more manuscripts is required. It is difficult to determine whether *Gorakṣavijaya* or *Maināmatīr Gān* formed a part and parcel of the Nāth literature.

As we are concerned mainly with the early history of Bengal we may

concentrate on the Hindu-Buddhist period of Dineshchandra extended from AD 800 to AD 1200. Dineshchandra has opined that to this period should be assigned the *Śūṇyapurāṇa*, the *Nāthagītikā* including *Gorakṣavijaya* and *Maināmatīr Gān*, *Kathā Sāhitya*, that is, *Vratakathā* and *Rūpakathā* (folk-tales) and the sayings of Dāk and Khanā. Dineshchandra has made a brilliant sociological study of the texts referred to above with the purpose of reconstructing the social history of ancient Bengal. But for obvious reasons, it would be unreasonable to assign the said literature in the period between AD 800 and AD 1200. As pointed out by Niharranjan Roy that the above-mentioned texts were put into writing when the oral traditions transmitted from generation to generation in *Prākṛt* language was rendered into the literary language [11]. In fact, most of the texts referred to by Dineshchandra Sen were compiled in the medieval period and it would be, therefore, reasonable to assume that some social ingredients entered into those texts at the time of compilation. It does not necessarily mean that those texts are not useful for reconstructing the social history of ancient Bengal. But the historian has to be very cautious in making use of the data furnished by those texts. To quote Niharranjan Roy:

"There is some historical basis in the adages of Dak and Khana; scattered here and there in these sayings there is enough to give a fragmented impression of society, undoubtedly that of the tenth or eleventh century. However, the form and language in which they have come into our hands are not as old, and the same kind of room for doubt is applicable to the *Śūṇyapurāṇa, Gopī Chander Gitā*, *Sekhśubhodayā, Ādyer Gambhīrā, Murśidyāgān* and the ancient folk-tales. The real story of the life and language of the common people, their daily joys and woes, their problems great and small, did not begin in written form but rather was contained in songs, stories, proverbs, ballads and folk-tales and circulated amongst the people in oral tradition; only a long time later, perhaps, it achieved a literary form, and thus the language of the common people was elevated to the status of a written language. [12]"

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