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EDITORIAL ARTICLE

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Management of Referral Services through Computer Based Management System

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ABSTRACT

A fundamental and necessary function of health care system is to provide a sound referral system. In India even after 38 years of recommendation by Shrivastava committee for development of a 'Referral Service Complex' between PHC and higher level, we do not have effective referral system. This paper deals with the existing referral system and the ways and means of improving by introducing computer based management at PHC by enrolling every individual with code number and linking with higher level to improve the referral system. The present trend of globalization stresses the need of computer based management system to be implemented early to improve the quality of basic health care in India.

Key words: Referral service, referral system, computer based management system, unique number/coding system, health card.

INTRODUCTION

Development of referral service complex by establishing proper linkage between the Primary Health Centre (PHC) and higher level referral and service centers is one of the essential functions of health care delivery system (1, 2). Shrivastava committee report recommended that the primary health centres, as well as the taluka, district, regional and medical college hospitals should each develop living and direct links with the community around them as well as with one another within a total referral services complex (1). One of the lacunae in our health care delivery system is the absence of such effective referral services.

Increasing the accessibility of health services to 1210 million populations and meeting the basic as well as the specialized needs of all in the least costly manner by means of adequately supported and effectively functioning referral system are the present day challenges. Referral services can be better organized by introducing computer based management system at primary level and connecting the system to higher levels such as taluk, district, region and medical college hospitals.

REFERRAL

A fundamental and necessary function of health care system is to provide a sound referral system. There must be a two way referral system and patient who is referred back should have good follow up care. This will ensure continuity of care and inspire confidence of the patients in the system and also enhances the community participation at large .The secondary and tertiary levels of the health system provide graded specialized services. Availability of such a system of referral is of paramount importance, ensuring the access of the needy population to highly specialized staff at the higher levels and of their services.

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THE EXISTING REFERRAL SYSTEM

Referral

From the medical officers perspective the advantages of the system lie in his or her ability to decide which line of investigation to pursue, where it is available and to whom he or she can refer to. The problem is that most of the PHC medical officers themselves do not know where to refer a particular patient for treatment as they lack in knowledge about the facilities available at the referral institution and lack of defined norms for care at each level of referral. This is mainly due to communication gap prevailing everywhere. This may be one of the problems in India why we don't have an effective referral service.

The present policy of decentralization of health services requires establishment of a good referral system with definite protocol for the referral which is lacking.

At present people are going to tertiary hospitals for relatively minor ailment and with increasing population and urban migration the number of cases attending tertiary hospital started increasing, making our outpatient care system overcrowded.

In-patient system

Inpatient system is by far the most expensive component of a hospital. Expenditure on medical care is rising every day, which is true for a developing country especially India where large hospitals providing specialized curative services consuming about 80% of the expenditure. Surgical sections showed the highest time lag in days between admission of patients and placing order for investigations. In surgical sections, the average waiting time was 10.4 days which is very high (4).

Follow-up

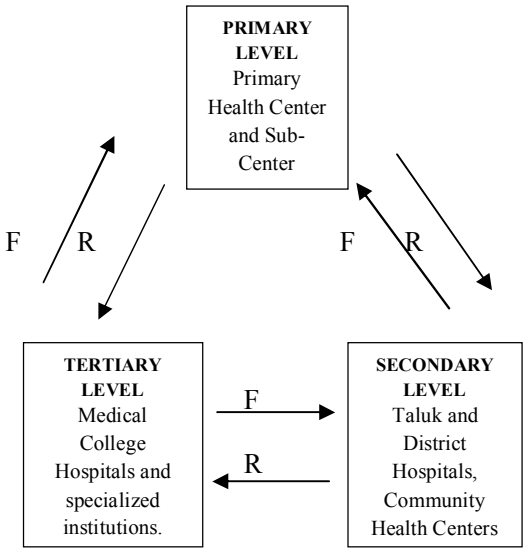
Higher institution should send back the information about the illness, course in hospital and guidelines about further treatment at the PHC. This is not put into effective practice at present. Individuals sometimes get lost in the referral system and sometimes they are never referred back to the initiating PHC for follow up for resumption and completion of care. This is the weakest link in the system of referral.

Retrieval of records

The retrieval of records becomes very difficult which are hand written especially, if hand written are difficult to read we have to hunt for information if it is not recorded in the standard place (6).The absence of information does not mean absence of phenomenon and uniform definitions and procedures were not used even in good hospital records. Moreover, during extraction of information chances of making errors likely to occur if handwritings are difficult to read.

ROLE OF COMPUTER BASED MANAGEMENT SYSTEM

By inter-linking the higher institution with Primary care institutions and making available the facilities and the services of different specialties through computer system will improve the quality of referral services (fig.1)



F- Follow up R - Referral

Figure 1

Even referral services between private primary care and public secondary care or vice versa for diagnosis and treatment is possible. In this aspect, state health system projects are under implementation in the states of Andhra Pradesh, Kerala, Punjab, West Bengal and Orissa under the assistance of World Bank with the main objective of improving referral services in rural areas (3).

We can eliminate overcrowded out-patient system, keeping only emergency admissions and admissions through referral services at higher levels, thereby reducing man hours spent by highly specialized personnel. This can improve the quality of services of doctors at tertiary hospital and they can have more time to treat the referred patients.

There is ample of scope for saving bed days. The administration procedures become faster and more effective and even registration /appointment /fixing dates for elective surgery etc. can be done from any PHC, saving precious time and reducing the duration of stay of the health care utilizers (fig 2).

Name:	Age:	Sex:
Address:	Code number:	
Occupation:	Income:	
Marital Status:		
H/O Present Illness:		
H/O Past Illness:		
Drug /Allergy History :		
Treatment for any chronic Illness:		
Illness for which referred :		
Referral institution Code/Name:		
Date:		

Figure 2

In Denmark, Netherlands and UK, there is an accepted referral system which denies patients direct access to specialist. They have to be referred by their general practitioners, who is the gate keeper and this helps to prevent unnecessary use of more expensive health resources. British system has managed to keep down the cost through its general practitioners who carry out a gate keeping role in controlling access to specialist in the hospital services, and also managed to cut down the number of hospital beds to minimum(5). Follow up services after initial management in hospital are essential at the PHC which can be provided if there is a communication between the upper and lower level and can be improved by introducing computer system and making available the information (discharge summary) needed for the cases to follow up at primary level.

Retrieval of records relating to one individual (or to one family) becomes easier in computer based system compared to retrieval of records which are hand written. Recent years has seen an increasing interest in computerization of medical records with an eye to easy retrieval of information at individual level and bringing together of records from different sources. Different records relating to the same person may be linked, like records from various hospitals.

UNIQUE NUMBER/CODING SYSTEM

Each individual is coded with an identification number which is called as the unique number. The unique number should contain sex code, the house hold number, village code, PHC code and district code which should already been defined. The identification/unique number for every individual can be used as health cum referral card (fig 3).

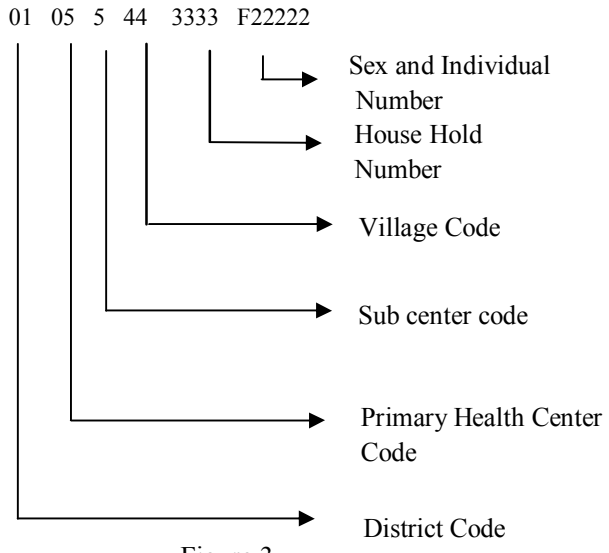


Figure 3

Just like ration card, the health card cum referral card make medical officers or health professionals at PHC more accountable for health care delivery to the community served.

COST

At present, computer system already exists in major hospitals and only the PHC's need a computer with interlinking. The management does not need extra expenditure except for the computer. Even for the manpower required for data entry, the health assistant at PHC can be trained. Studies on cost analysis on introduction of computer at PHC level showed, it is more cost effective than manual system (7).

CONCLUSION

Introduction of computer system at PHC and enrolling every individual with code number and linking with higher level can improve the referral services. The duration of stay at hospitals can be reduced by making appointments from PHC especially for elective surgery and thereby reducing the cost of secondary and tertiary care. Improve the follow up services and easy retrieval of medical records of individuals. These qualitative improvements of health care delivery system are more important for future generation. The present trend of globalization stresses the need of such system to be implemented early, will go long way in improving the quality of basic health care in India.

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ORIGINAL RESEARCH ARTICLE

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"Induced Abortion" &"Sterilization" as Individual Methods of Contraception among Rural Married Women of Reproductive Age and Non Usage of Spacing Methods of Contraception - A Community Based Cross Sectional Study.

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ABSTRACT

Aims and objectives: To study the prevalence of induced abortion and sterilization as individual method of contraception vs. spacing methods among rural married women and to find out the reasons for non usage of spacing methods of contraception. **Materials and methods**: An interview schedule was prepared based on the model survey questionnaire recommended by the WHO. Based on the sample size, 600 married women of reproductive age are selected from eligible couple register by random sampling method and their contraceptive practices studied. **Results:** Induced abortion as a routine method of contraception is undesirable, but it is practiced in certain circumstances under the provisions of MTP act 1972. In this study, it was found that 12% of the rural women had induced abortion at least once as a method of contraception and sterilization was found to be 58 %, whereas the usage of spacing methods of contraception was only 5.5% (P<0.001). The reasons attributed to non-usage of spacing methods were as followed; Breast feeding/postpartum - 22, Want to become pregnant - 46, Lack of knowledge -26, Opposition from partner - 15, Fear of side effect-59, Religious Belief- 3, Do not know-2. (P<0.001). Knowledge and contraceptive use: The overall awareness for any contraceptive was 92.3 % among the respondents. There was significant difference between the contraceptive users and non users with the knowledge status. (P<0.001)

Introduction: Among the socio demographic goals of the NPP 2000,

1. Addressing the reproductive and child health services, supplies and infrastructure
2. Achieve universal access to information/ counselling and services for fertility regulation and contraception with a wide basket of choice are the two major goals pertaining to contraception.[1]

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To develop such a strategy, we need to understand the various reasons for not using the spacing methods of contraception, based on qualitative and survey data, to determine the size and composition of the group, to identify the high priority subgroups and deliver information and services to meet the specific needs of each selected subgroup.[2] Though 42.3% of eligible couple uses one or other method of family planning, they discontinue them,[3] the reason for which has to be identified, so that remedial measures taken to stop discontinuance. Unintended pregnancies pose risks for women, their families and society. In developing countries, about one-fourth of pregnancies are unintended that is, either unwanted or mistimed (or wanted later). One particular consequence of unintended pregnancies is induced abortion. Lack of access to spacing methods is a

major factor behind the 76 million unintended pregnancies every year in the developing world.[4] These lead to 19 million annual unsafe abortions, causing some 68,000 deaths. Research shows that one in ten pregnancies will end in an unsafe abortion with Asia, Africa and Latin America accounting for the highest numbers. Although the Indian government has shifted away from its long-standing policy of promoting female sterilization as the primary form of family planning, the reality is that government health service providers still offer women very little information about and access to temporary methods of contraception. Many women also face family opposition to the use of temporary contraceptives. Without the option of using temporary contraception, many women resort to abortion. Of these, the vast majority do not realize that abortion is legal[4].

Lack of Access*:* In rural areas, supplies of temporary contraceptives at primary health centers and local clinics are frequently inadequate or absent. In most areas, contraceptive use is assumed to mean female sterilization. Significant challenges remain in making temporary methods readily available and accessible.[5]

Social and Cultural Norms*:* Family and gender based constraints on women in India also are likely to limit women's use of temporary contraceptives. These include social pressures for early marriage and early childbearing, lack of decision making power in the household, limited physical mobility which impedes their ability to access services and physical violence and coercion in sexual and family relations. Only 2% of women in ICRW's study said they could leave home to obtain contraceptives without consultation or approval from others in the household.

Health Concerns and Side Effects: In many countries concerns about health and contraceptive side effects cause much unmet need. These concerns come from a variety of sources, including women's own experiences with using contraception, experiences of friends, and the rumors that often result as these experiences are told and retold throughout communities[6].

Women who never have used contraception: Most women non- willing to use spacing methods cite a health concern about a particular method have never used that method themselves. Sometimes, they have heard about medical problems that others experienced using contraception. In the Philippines, women provided interviewers with detailed, often graphic descriptions of the health risks of using contraception .In Nepal women with unmet need told interviewers that they feared sterilization because they knew of women who had died of sepsis following sterilization procedure.[6]

Knowledge of availability: Contraceptive use among sexually active, fertile women aged 15-45 was related to their attitude towards the various contraceptive methods, social influences, perceptions of being able to use a method correctly and consistently, a correct estimation of fertility and communication with their partner. On medical methods (OCs, IUDs and sterilization) many respondents expressed doubts as to their safety for health. Social influences most frequently concerned the use of OCs. Respondents considered themselves able to use oral contraceptives correctly, but expressed general fear about intrauterine devices and sterilization, and many women believed they were not able to use condoms and periodic abstinence consistently. Multifactorial analyses revealed that current contraceptive use was principally determined by social influences, attitude and self-efficacy with respect to medical methods. Contraceptive choice (and the use of non-medical methods) depended greatly on encouragement to use and being in favor of medical methods. A lack of social support for use of medical methods and a negative attitude towards them was related to higher use rates of condoms, periodic abstinence, withdrawal and reliance on 'luck'. In the case of withdrawal and/or no method, underestimation of fertility played an additional role. Contraceptive choice appears to be determined more by a general like or dislike of medical methods rather

than on a weighing of the merits of individual available methods.[6]

Contraceptive discontinuation and switching: As contraceptive use increases and becomes a more established behaviour, prevalence is no longer a sufficient marker of programme success. Contraceptive continuation may become more important than acceptance in increasing contraceptive prevalence. Information on method specific discontinuation rates from small scale surveys shows, not unexpectedly, higher discontinuation rates for pills and condoms than intra uterine devices (IUDs).[7]

Materials and Methods:

Sampling procedure: Initially Tirunindravoor PHC was randomly selected in Thiruvallur HUD. It has five sub centres. Among these, Lakshmipuram HSC was randomly selected by lottery method. List of all married women of reproductive age with their register no was obtained from eligible couple register from VHN. It had 1933 married women of reproductive age. By Random sampling method, 600 women of reproductive age was selected. An interview schedule was prepared based on the model survey questionnaire recommended by the WHO. The developed schedule had four parts comprising of the background characteristics of the respondent, marital status and fertility, knowledge and attitude to contraception and use of contraceptives and perceived availability and accessibility of contraceptives. The questionnaire was pretested among 40 married women in HSC Nemilicherry. Based on observations made during the pre testing, the questionnaire was modified. Data collection was done by house to house visit. The investigator along with a VHN approached at least 15 respondents' every day. Mostly the women who were to be interviewed, had been informed previously. Even then unable to find women, she was revisited at the next possible time and interviewed. After obtaining their informed consent orally, relevant information was obtained from the respondent using the pretested structured questionnaire any misconception or queries were clarified and the respondent was thanked for sparing the time.

Sample size calculation: **Sample size**: Is considered for calculation of sample size at 95%CI (Z=1.96) and limit of accuracy kept at 20% of 14.1% (the rate of prevalence of (non- usage) for contraception based on **NFHS-3 (2005—2006)** $N = Z^2 pq / d^2$ and has been rounded off to 600. **Data analysis**: Data was coded and analysed as percentages and chi-square using statistical software SPSS 16.

Results: The prevalence of induced abortion as a method of contraception was found to be 12% and that of sterilization is 58% and spacing methods usage is 5.5%.($P<0.001$) (**Table 1)**

Table 1: Percentage of contraceptive practice used

S. no	Percentage of contraceptive practice used	Frequency	Percentage	P value
1.	Tubectomy	348	58 %	<0.001**
2.	Spacing methods	33	5.5%	

**Denotes Highly significant .

The reasons of non usage of spacing methods of contraception are Breast feeding/postpartum - 22, Want to become pregnant - 46, Lack of knowledge - 26, Opposition from partner - 15, Fear of side effect - 59, Religious Belief - 3, Donor know - 2.($P < 0.001$)(**Table 2)**

Table 2: Reasons for non-usage of spacing methods

S.no	Reasons for non-usage of spacing methods	No	%	P value
1.	Breast feeding/ post partum	22	12.7%	<0.001**
2.	Want to become pregnant	46	26.6%	
3.	Lack of knowledge	26	15 %	
4.	Opposition from partner	15	8.7 %	
5.	Fear of side effect	59	34.1%	
6.	Religious belief	2	1.2 %	

**Denotes Highly significant .

Knowledge and contraceptive use: The overall awareness for any contraceptive is 92.3% among the respondents, there is significant difference between the contraceptive users and non users with the knowledge status X^2=77.29 (P 0.001). **(Table 3)**

Table 3: Association between knowledge of contraceptives and it's usage

Knowledge	Contraceptive user	Contraceptive non user	Total	
Present	391	163	554	$X^2 = 77.29$
Absent	3	43	46	$P < 0.001^{**}$
Total	394	206	600	

**Denotes Highly significant .

Intention to use in future: Among the non users (206), only 93 intended to use a contraceptive in future and among them only 22 intended to use within 12 months.

Discussion: In a study among adolescent's mothers, 40% had induced abortion and sterilization as a method of contraception[2]. According to NFHS - 3, 53% of the rural women used any method of contraception. Also the use of modern spacing methods (OCP, IUD, and condom) is considerably lower in rural areas when compared to their urban counterparts.[3] Most of the mothers who used induced abortion had the desire to terminate childbearing, at least for a few years.[4] This is the same with our study and among the reasons for discontinuance, anxiety and fear is the main cause rather than the real complications. This lacunae should be corrected by motivating the medical officers and field workers in offering counselling services to the needy mothers. In addition, women seeking induced abortions report more challenging family situations they are more likely to be separated, divorced, widowed or living, and to report difficulties with their male partner. Women undergoing induced abortion were more likely having been physically abused by a male partner, having experienced sexual abuse or sexual violence ($p < 0.001$)[4,5].The main factors which independently affected morbidity were the place of operation, gestation at termination, method of operation, sterilization at the time of abortion, and smoking habits[6, 7, 8, 9].

Distribution of age of respondents:

In our study, 10.5% were in the age group of 15-19 yrs,28.2% in the age group of 20-24 yrs, 26.2% were in the age group of 25-29 yrs,15.4% were in the age group of 30-34 yrs,12.2% in the age group of 35-39 yrs,6.4% yrs in the age group of 40-44 yrs,1.5% in the age group of 45-49 yrs.

Age at marriage:

Age of the respondents at the time of marriage ranged between 13-23 . Among the study group 49% had marriage <18 yrs. 27.5% had marriage between 18-25 yrs ,23.5% had marriage >21 yr.

Educational status of respondents:

11.5% of women were found to be illiterate, 37.4% had primary level of education ,38.5% had high school education, 10.1% had secondary level,& only 2.5% of the women were graduates. At the time of study only 8.2% were pregnant ,35.4% had two children & 55.1% had more than two children.

Frequency of number of children in the family:

At the time of study only 8.2% were pregnant . 35.4% had 2 children .55.1% had more than two children.

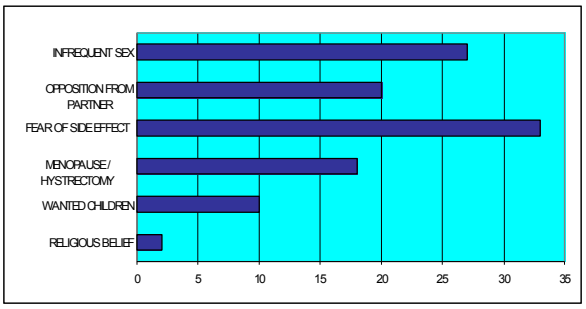
The study results are similar to NFHS -3 data.

Reasons for stopping:

Among the 33 respondents who had reported to have used contraceptives and have now stopped, the reasons were to become pregnant in 20 among them, 12 for health reasons and 1 due to non-approval of husband.

Reasons for non intention to use contraceptive in future: Is shown in Fig 1. Here also fear of side effects play the main reason.

Fig: 1 Reasons for non intention to use contraceptive in future.



Among the contraceptive users, it is found that majority 58 %have undergone tubectomy, and OCP is least used (1%).This matches with the highest used method as per NFHS -3 . The reason for lesser usage of oral pill has to be further investigated. Condom usage is seen in just 2% of the total respondents, in spite of increased IEC activities. This could be because of the shift in usage of condoms more as prevention for HIV rather as a contraceptive.

Conclusion: Based on the study results, percentage of permanent method of contraception (tubectomy) and induced abortion are more when compared to the percentage of usage of spacing methods. Those who use also tend to discontinue for some reason or other and most of them fear the use of spacing methods of contraception. This has to be addressed, to avoid unintended pregnancies and abortions thereby it is recommended that Misconceptions about spacing methods of contraception should be clarified, the lacunae about the fear of using the contraceptives should be corrected by motivating the medical officers and field workers in offering counselling services to the needy mothers and motivating mothers to use spacing methods and thereby preventing unwanted & unintended pregnancies. Women who are post- partum, breastfeeding, or approaching menopause need counselling on their likelihood of becoming pregnant and on the family planning methods that might be appropriate for them. Programs should be planned so as to improve interpersonal relations between clients and providers and to ensure periodic follow-up of clients to reduce the number of women who stop using contraception.

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ORIGINAL RESEARCH ARTICLE

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A study of hospitalized cases of gastroenteritis at a teaching institute in Maharashtra,India.

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ABSTRACT

Context: Acute gastrointestinal illnesses are amongst the most common diseases worldwide: ranging from mild annoyances to devastating, dehydrating illnesses that can kill within hours. Studies on gastroenteritis involving all age groups are limited. **Aims:** To study the age & gender patterns and the socioeconomic correlates of admitted cases of diarrhoeas, the reporting time after the onset of diarrhea & its correlation with the outcome of these patients, the average duration of hospital stay of these patients. **Settings and Design:** A descriptive cross sectional hospital based study was carried out in the hospitals of a Government Medical College in Maharashtra, India. Methods and Material: The personal interview technique combined with clinical examination and recording the findings of investigations was used uniformly using the pre-tested structured questionnaire. Statistical analysis used: p-value calculated by SPSS version 17.0. **Results:** Total 685 hospitalized Gastroenteritis cases were studied during the one year study period. 632(92.26%) patients were cured. Cholera could be confirmed on laboratory examination with a detection rate of 8%. The median hospital stay was 3 days, with the mean of 3.67 days. (SD = 2.05).

Conclusions: Children were affected more. Maximum cases were reported from the lower socio economic status. Patients who reported late to the hospital or had complaints for a longer duration before hospitalization had increased duration of hospital stay. Mortality accounted for 0.3% cases. This indicates that gastroenteritis is a disease severe enough to result in death.

Key-words: Gastroenteritis, Diarrhoea, Hospitalized

Introduction:

Globally, acute diarrhoeal diseases account for about 17% of the deaths in children each year [1, 2] and are an even greater cause of long lasting morbidity, especially with longer-term impact of early childhood diarrhoea on growth and development. [3]

Acute gastrointestinal illnesses are amongst the most common diseases worldwide: ranging from mild annoyances to devastating, dehydrating illnesses that can kill within hours. In Asia, Africa & Latin America, acute diarrhoeal illnesses are a leading cause of morbidity in children- with an estimated 1 billion cases per year.[4] In the first years of life children in India have an average of 5 to 6 episodes of diarrhoea a year. A lot has been studied regarding gastroenteritis which establishes that there are geographic variations in clinico-epidemiological profiles of diarrhoeas. Such differences are largely due to the pathogenic variance, levels of endemicity of diarrhoeal diseases, veritable degrees of host-parasite relationships leading to immunological

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adjustments, the modalities of treatment and management, as well as the behavioral patterns & life styles of the community including water sanitation, faeco-oral contamination, eating habits and movement of population. The literature review reveals many studies on gastroenteritis in the field or in children or related to a specific etiology. However such Studies on gastroenteritis involving all age groups are limited. In the light of this, the present study of clinico-epidemiological presentations of diarrhoeas was planned & conducted at a teaching institute.

The aim was to study the trends regarding the important clinical features & presentations as well as certain significant epidemiological correlates of all hospitalized patterns of diarrheas/ gastroenteritis.

Materials and Methods:

A descriptive cross sectional hospital based study was carried out in the hospitals of a Government Medical College in Maharashtra, India. Patients of gastroenteritis admitted in male and female Medical & Paediatrics wards during the one calendar year study period. Those having loose motions & increased frequency of stools, irrespective of other morbid conditions they were suffering from were included in present study. Patients not willing to participate were excluded. The personal interview technique combined with clinical examination and recording the findings of investigations was used uniformly using the pre-tested structured questionnaire. Informed consent of the patients was obtained prior to their interviews and examination.

Results:

Table 1 shows the monthly admissions of patients of gastroenteritis.

Total 685 hospitalized Gastroenteritis cases were studied during the one year study period. In the present study, gastroenteritis cases admitted during the rainy season were 20.44% (140) of the total. During winter season 53.58% (367) cases were reported. Summer accounted for 178 (25.98% 0of the cases.

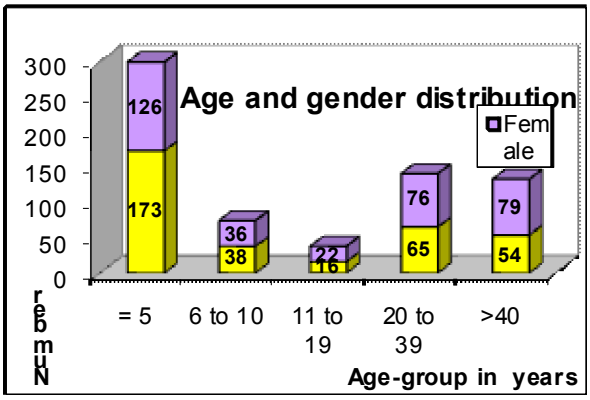
Table 1 Monthly gastroenteritis cases

S. No	Month	Male	Female	Total
		No.(%)*	No.(%)*	No.(%)*
1	April	16(4.6)	16 (4.7)	32(4.7)
2	May	12(3.5)	12(3.5)	24(3.5)
3	June	15(4.3)	33 (9.7)	48 (7.0)
4	July	18(5.2)	23(6.8)	41(6.0)
5	August	22(6.4)	9(2.7)	31(4.5)
6	September	13(3.8)	7(2.1)	20(2.9)
7	October	17(4.9)	16(4.7)	33(4.8)
8	November	58(16.8)	55(16.2)	113(16.5
9	December	59(17.1)	64(18.9)	123(18)
10	January	57(16.5)	41(12.1)	98(14.3)
11	February	26(7.5)	25(7.4)	51(7.5)
12	March	33(9.5)	38(11.2)	71(10.4)
Total		346(50.6	339(49.4)	685(100)

Chi square=17.84, degree of freedom =11, p=0.0854

Figure 1 shows Age and gender-wise distribution of patients

Figure 1 Age and gender-wise distribution of patients



Regarding distribution according to education and occupation, under- 5 children (304 in number i.e. 44.37%) were considered as the not applicable group. Illiterate patients were 49(7.01%). Patients with primary education were 163(23.94%), secondary educations were 109(15.91%), higher secondary education were 47(6.87%), graduates were 11(1.61%), and post-graduates were 2 (0.29%). Laborers' constituted 76(11.09%). Farmers constituted 46(6.72%), housewives were 95(13.87%), students were 119(17.37%), others were 32(4.68%) and unemployed were 13(1.9%).

Socioeconomic status (SES) distribution [5] of the patients revealed that: 3(0.45%) belonged to Class I, 10 (1.45 %) were from Class II, 186 (27.15%) were from Class III, those from Class IV were 252 (36.79%), and Class V were 234(34.16%).

Patients from urban area were 389(56.64 %) and from the rural area were 296(43.36 %).

Table no.2 shows details of certain parameters related to diarrhoea.

Table 2 Certain parameters related to diarrhoea

Variables	**Patients number (Total 685)**	**Patients** %
Duration of complaints before hospitalisation		
< 24 hours	122	17.81
24-48 hours	316	46.13
> 48 hours	247	36.06
Frequency of stools (per day)		
3-5	153	22.34
5-10	232	33.86
>10	300	43.80
Presence of blood or mucus		
Blood only	14	2.04
Mucus only	103	15.04
Blood + Mucus	52	7.59
Loose motion without blood /mucus	516	75.33
Hand washing practices		
Prior to eating only	37	5.40
After defecation only	156	22.77
Prior to eating & after defecation	279	40.73
No	213	31.10
Hospital stay		
≤1 day	70	10.22
2 to 4 days	451	65.83
5 to 7 days	123	17.96
≥8 days	41	5.99

The operational definition of gastroenteritis employed was: increased frequency of stools (> 3 stools per day) [6] with or without other complaints. Hence complaints of loose motions were present in all 685 patients. Vomiting, fever, abdominal pain, etc. were either present alone or in combination. Vomiting was present in 614 (89.64%), fever was present in 228 (33.28%), abdominal pain was present in 133 (19.42%), nausea in 53(7.74%), cough in 63 (9.20%), while other complaints like body ache, generalized weakness were observed in 22 (3.21%).

History of similar complaints in other members was present in 22 (3.21%). Exposure to contaminated source was reported by 19 (2.77%). History of eating or drinking at public place was given by 29 (4.23%). Eating or drinking during traveling was reported by 41 (5.99 %). History of similar complaints of diarrhoea in previous two months was told by 36 (5.25%).

The operational definition [7] of hand washing applied was: Satisfactory hand washing with sufficient soap or suitable antiseptic agent along with plenty of water so as to wash and clean hands till the wrist joint.

Tap water was used by 423(61.75%), well water by 223 (32.56%), other sources of water supply like hand pump by 39 (5.69%). The surrounding cleanliness was considered as per history obtained from respondents. Surrounding cleanliness was reported satisfactory in 308(44.96%) and non-satisfactory by 377(55.04). Proper place for waste disposal was reported by 293(42.77%) and 392(57.23%) reported waste disposal anywhere.

Table 3. Degree of dehydration.

Sr. No.	Dehydration	Male		Female		Total	
		No.	%*	No.	%*	No.	%*
1	Mild	205	59.3	199	58.7	404	59
2	Moderate	91	26.3	86	25.4	177	25.8
3	Severe	28	8.2	26	7.7	54	7.9
4	No dehydration	22	6.4	28	8.3	50	7.3
Total		346	50.6	339	49.4	685	100

Table No.3 represnts the distribution of the patients according to the degree of dehydration. Complications like oliguria, anuria, and convulsions were observed in 3.5% patients. While remaining 96.5% did not have any complications at all.

Blood investigations were abnormal in 159(23.5% of 676), Stool routine & microscopy was abnormal in 67(10.6% of 634), stool for hanging drop was

abnormal in 16(8% of 200), and results of other investigations were abnormal in 74(21.89% of 338). 16 out of total 200 suspected cases of cholera could be confirmed on laboratory examination.

The number of patients who were treated with Oral Rehydration Solution (ORS) along-with Intravenous Fluid (IVF) was 668(97.51%). The IVF used were mainly Ringer lactate (RL), & Dextrose Normal Saline (DNS). The number of patients who were treated with ORS+ IVF+ Antibiotics was 604(88.18%). The antibiotics used were Metronidazole, Gentamycin, Cephalosporins, Doxycycline, which were subsequently changed to other antibiotic, if required after the culture-sensitivity wherever indicated. The treatment was in form of ORS+ IVF+ Antibiotics + other drugs in 182 (26.57%). Other drugs included probiotics, zinc supplements or drugs for symptomatic treatment for the specific disease. The total number of patients in whom ORS was given, alone or in combination with other drugs or IVF, was 680 (99.50%).

Table 4. Relationship of duration of complaints before hospitalization with hospital stays in patients.

Sr. No.	Duration of Hospital Stay	Duration of complaints before hospitalization			
		< 24 hours	24-48 hours	> 48 hours	Total
1.	≤ 1 Day	21	33	16	70
2.	1+ to 5 days	85	208	152	445
3.	5+ to 7 days	14	56	59	129
4.	> 7 days	2	19	20	41
Total		122	316	247	685

Table No.4 shows relationship of duration of complaints before hospitalization with hospital stays in patients. Total 632(92.26%) patients were cured, 29(4.23%) discharged on request, 22(3.21%) discharged against medical advice. Deaths were reported in 2 patients (0.30%). Thus the overall outcome of the gastroenteritis cases was good with 92.26% patients cured, and mortality only 0.30%. Both the reported deaths were in children.

The associated diseases were observed in total 17.22% of 685. Diabetes was reported in 6(0.88%), Hypertension in 10(1.46%), Bronchopneumonia in 22(3.21%) and Malnutrition in 7(1.02%). Other diseases like Tuberculosis, Measles, Enteric fever, Respiratory tract infection, Urinary tract infection Epilepsy, Poisoning due to ingestion of some seeds etc. were observed in total 49(7.15%) patients. Although malnutrition accounted for 1.02% considering all age groups, it was found to account for 2 % in the under-5 age group. In the present study, 27 patients (3.74%) had an associated HIV infection. Two of such cases had repeat admission to the hospital with the complaints of diarrhoea within a span of 1 month. Enteric fever was also observed as the associated disease & Widal test was positive in 5 patients. Respiratory tract infection in association with gastroenteritis was observed in 3 patients, all of under-5 age group.

Discussion:

The observation of 685 cases of gastroenteritis in one year is similar to the finding of Gupta et al [1] in a study in urban slum who observed that during the 1 year study period a total of 642 gastroenteritis cases were reported.

The minimum number of cases was in September 2006 (only 20 cases), and maximum cases of gastroenteritis were in December 2006(123 cases), followed by November 2006 (113 cases). Ananthan et al [8] had found maximum cases of gastroenteritis during the months of November- December. The peaks reported in different months of the year as reported in other studies may be probably due to Geographical variation as well as outbreak of gastroenteritis due to the organisms in different months of the year.

The observations of present study coincide with the study of Rao M. [9] who quoted that 1.5% of adult hospitalization was due to gastroenteritis.

The maximum cases of gastroenteritis (299 out of a total of 685 which accounts for 43.6%) belonged to the under-5 population. Various studies have

reported similar increased occurrence of Gastroenteritis in Children[11] [12] [13] [14] [15] [16].

Approximately three-fourths of the patients belonged to Lower (Class IV & V) SES. Thus majority of patients in the present study were from the low socioeconomic group. Similar observations have been reported in the study of Kaistha N et al [15] Banerjee B et al [17] Joshi CK et al [11] and Fule PR et al [18] The increase number of cases in lower socio economic group may be probably due to the various factors like low standard of living and thus poor health along with non sanitary surroundings.

More than half the patients in the present study were from urban area. The more number of people from urban area may be due to the fact that the hospitals are situated in the urban area. Kaistha N et al [15] in hospital based study in Chandigarh observed that majority of patients were from urban slums.

Apart from loose motions, other associated complaints were also noticed in tn majority of the patients. This is a common occurrence because those having only diarrhea or loose motions wont report to the medical faculty or won't be admitted in the hospital especially if the condition is mild. Associated symptoms were also observed in the study of Srivastava K et al. [10] It was observed that associated pyrexia was present in 40% cases and cough was also present. De A et al [19] had observed that Fever was present in 49 patients (53.3%), followed by abdominal pain in 26 (28.3%), vomiting in five (5.4%) and other symptoms in four (4.4%).

Higher number of patients (43.80) had frequency of stools as >10 stools per day. This observation is comparable to study of Srivastava K et al [10] who observed that 37.27 % of cases had >10 stools per day. The occurrence of increased frequency of stools may be because such patients are severely dehydrated and hence being hospitalized.

Majority i.e. three-fourths of the patients (75.33%) had loose motions without blood or mucus. Remaining one-fourth had blood, mucus or passage of both blood and mucus in the stools. Talan D. et al [20] found many cases of gastroenteritis with blood in stools. De A et al [19] observed 5.4% of patients had liquid stools with mucus and blood.

Maximum patients (58.7%) were observed to have mild dehydration. Females had dehydration of a lower degree as compared to the males. However there was no statistically significant difference in the degree of dehydration between males and females (χ^2 = 0.95, df =3, p=0.8126).No dehydration was present in only 7.37% of the patients. Various studies have quoted dehydration of varying degrees. Srivastava K et al [10] in their study observed that, dehydration was present 79.8% cases. Joshi CK et al [11] found that, 46.2% children suffered from moderate dehydration and 35.4% from mild dehydration.

Only 3.5% of the patients had complications probably due to appropriate control of dehydration.

Cholera could be confirmed on the laboratory examination with a detection rate of 8%. The negative report may be due to prior treatment with antibiotics before stool sample is taken. Kaistha N et al [15] reported a detection rate of 37.8% in 2002 and 32% .

The median hospital stay was 3 days, with the mean of 3.67 days. (SD = 2.05). An association was observed between duration of complaints before hospitalization and hospital stay duration (p =0.0008336). Patients who reported late to hospital or had complaints for a longer duration before hospitalization had increased duration of hospital stay. The management of gastroenteritis was found to be delayed in some cases especially those from lower socio economic class, which resulted in increased dehydration risk and death. The delay in reporting time to hospital leading to increased dehydration was found by Banerjee B et al also. [16]

2 deaths, both in children were observed. Mortality in gastroenteritis patients was reported by Srivastava K et al [10] .Hospital based study of Fule PR et al [18] during an epidemic revealed no mortality.

Gastroenteritis was accompanied with other diseases in 17% of the patients. This occurrence might be due to the severe infections' in a previously diseased patien

Conclusion:

Children were affected more. Maximum cases were reported from the lower socio economic status (Class III+ Class IV: 70.95% of 685). The poverty can result in malnutrition, improper hygiene, poor sanitation; all of which can increase the risk of gastroenteritis. Moreover this being a study in the Government set-up where most of the patients actually come for a low SES, or report to be from low SES to gain the various facilities.

Dysentery was a feature of few (7.6% of 685). But this accounts for seriousness and points towards an underlying condition and severity of gastroenteritis. Dehydration was observed in most of the patients. Patients who reported late to the hospital or had complaints for a longer duration before hospitalization had increased duration of hospital stay.

The high cure rate is of specific importance in point of view that isolation of specific micro-organism causing gastroenteritis was done in few cases only. This underlines the importance of correction of dehydration in time and management of the cases by some general guidelines. Thus isolation of the etiological agent is not always required in gastroenteritis except for few situations like gastroenteritis refractory to treatment. Mortality accounted for 0.3% cases (2 in number). This indicates that gastroenteritis is a disease severe enough to result in death and should not be overlooked.

There is necessity of more concerted efforts and measures in the high risk areas like urban slums, rural areas or the areas where water scarcity exists, or where the population is down- trodden; or which are not having the access and approach towards the health.

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ORIGINAL RESEARCH ARTICLE

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Quality of Life (QOL) Among Geriatric Population in Siliguri Sub-division of District Darjeeling, West Bengal

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ABSTRACT

Background: Global geriatric population has been on a rise. In India it is projected to rise to about 324 million by the year 2050. In the developing market economies like India; this tantamounts to additional social and financial responsibilities on the shoulders of their younger family members. However Quality of Life related issues have received little attention and are documented in only a few studies. The present study was carried out with an objective to assess the Quality of Life in geriatric population **Methodology:** 263 geriatric subjects aged 60 years and above, residing in Siliguri sub-division of district Darjeeling were enrolled for the study using multi-stage sampling between June 2009-May 2010. The study design was cross-sectional. The vernacular version of WHOQOL-BREF was used to assess the Quality of Life. Data was analyzed using software package SPSS-16. **Results:** Of the 263 geriatric subjects enrolled 172 were from rural area and 91 were from urban areas. The urban geriatric population had a higher score compared to rural population for Physical, Social relationship and Environmental domains. Rural subjects scored higher for Perceived Overall Quality of Life and Perceived Overall Health Status, but the difference was not found to be statistically significant ($p<0.05$). The male subjects had a higher mean score in all four domains compared to females. However, statistically significant difference was found only for Social relationships domain. **Conclusion:** No significant difference was found to exist for Quality of Life with respect to gender & place of residence in the study population.

Key words- Quality of Life, Geriatric, WHOQOL-BREF

Introduction

Ageing is a universal phenomenon accompanied by an increased risk of disease, disability, decreased functional capacity and eventually death.

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Global elderly population in the year 2002 was an estimated 605 million, with about 400 million belonging to low-income countries[1]. Growing elderly population puts burden on the productive family members, in terms of taking care through their incomes and other obligations that the society puts on families and extended families.

In India although the proportion of aged persons is low compared to developed countries, the absolute size is considerable[1]. As per the 2001 census elderly population (aged 60 years or above) accounted for 7.7% of total population. It is projected to rise to about 324 million by the year 2050[2]. However, with rapid changes in social scenario and emerging prevalence of nuclear family

set-ups in India in recent years the elderly people are likely to be exposed to emotional, physical and financial insecurity in the years to come. In India with majority of its population aged less than 30, the problems and issues of its grey population has not been given serious consideration and only a few studies on them have been attempted.

Rapid evolution of bio-medical knowledge and techniques has resulted in new life expectations not only of adding years to life, but also quality of life to years. Quality of life (QOL) has been defined as "an individual's perception of their position in life in the context of the culture and value systems in which they live and in relation to their goals, expectations, of standards and concerns".[3]

To help the elderly to live as good a life as possible despite their illnesses and decreasing capacities is one of our prime responsibilities.The present study was carried out with an objective to assess the Quality of Life in the geriatric population and its relation to gender and place of residence.

Materials and methods

The present study was of a cross-sectional design, carried out in Siliguri sub-division of District Darjeeling, West Bengal between June 2009-May 2010. The study unit comprised of the geriatric population aged 60 and above residing in the Siliguri sub-division as enrolled in the voters list. Seriously ill elderly were excluded from the study for ethical reason as the administration of the study tools would add to stress and also give inappropriate results.

A study sample of 263 elderly individuals was calculated using Epi-info 3.5.1 version, assuming prevalence of distress in the geriatric age group as 66% as per a previous study[4]. Assuming 10% non response a total of 290 subjects were approached for the study. Multi-stage sampling procedure was done to enroll study subjects from two randomly determined urban wards (out of the thirty three urban wards) and from eight villages taking two from each successive stratum in order of Block, Gram Panchayat (GP) and villages.

Elderly persons who were ill over a month preceding the interview and unwilling elderly were excluded from the study. Only elderly people aged more than sixty years of age, who were willing to participate in the study and who were enrolled in the voters list and living in the study area for a minimum of 6 months were included in the study.

Study tool comprised of a semi structured schedule designed in consultation with subject experts (pretested on 10% of sample size) to obtain the socio-demographic profile of study population and the standardized WHOQOL-BREF questionnaires in Hindi and Bengali to assess QOL. Data was collected on variables such as age, place of residence, religion, sex, marital status, level of education and per capita family income. Socio-economic status was determined using modified B. G. Prasad's scale [All India Consumer Price Index (AICPI) for January 2010]. Financial dependency was classified into Dependent (dependent on others for their day to day living and having no source of income), Partially dependent (dependent on others for their day to day living and having insufficient income to sustain themselves) and Independent (sufficient income to sustain themselves and not dependent on others financially) as per a previously conducted study[5].

Data was analyzed using software package SPSS- 16. The syntax of WHOQOL-BREF was run on SPSS-16 to compute the various domain and facet scores of QOL.The statistical significance level was set at alpha = 0.05.

Results

Table 1 shows the socio-demographic profile of the geriatric population enrolled for the study. Out of the 290 subjects approached for the study, 23 declined to participate (Non response rate = 8%). Final data analysis was done on 263 geriatric subjects. Of the 263 subjects, 172 belonged to rural area and 91 were from urban area. Age wise, maximum numbers of subject (i.e. 36%) were between 60-64 years. Overall female subjects were more (54.75%) than male subjects; however male subjects were more in urban

area (56%). Majority (i.e. 90%) of subjects were Hindus. About 42% of elderly subjects were widowed (with death of either husband or wife) and 27.8% were financially independent. About half of the total subjects were illiterate. 11.8% & 33.5% subjects belonged to socioeconomic Class V and IV respectively.

Table 1: Demographic characteristics of the geriatric population in relation to place of residence (n=263)

Variables	Rural	Urban	Total
Age (In Years)			
60-64	57 (33.1%)	37 (40.7%)	94 (35.74%)
65-69	47 (27.3%)	19 (20.9%)	66 (25.06)
70-74	21 (12.2%)	20 (22%)	41 (15.59)
75-79	25 (14.5%)	3 (3.3%)	28 (10.64)
80 and above	22 (12.8%)	12 (13.2%)	34 (12.92)
Gender			
Male	68 (39.5%)	51 (56%)	119 (45.25)
Female	104 (60.5%)	40 (44%)	144 (54.75)
Religion			
Hindu	154 (89.5%)	86 (94.5%)	240 (91.26)
Muslim	15 (8.7%)	5 (5.5%)	20 (7.61)
Christian	3 (1.7%)	0 (0%)	3 (1.14)
Marital Status			
Married	98 (57%)	55 (60.4%)	153 (58.18)
Widowed	74 (43%)	36 (39.6%)	110 (41.82)
Financial Dependency			
Dependent	103 (59.9%)	38 (41.8%)	141 (53.61)
Partially Dependent	34 (19.8%)	15 (16.5%)	49 (18.63)
Independent	35 (20.3%)	38 (41.8%)	73 (27.76)

Table 2 shows the quality of life in the geriatric population in relation to place of residence. The mean QOL scores for the four domains were: Physical domain: 51.44 (SD ±11.21), Psychological domain: 50.46 (SD ±9.52), Social relationship domain: 52.09 (SD ±13.46), Environmental domain: 49.50 (SD ± 11.76). The urban geriatric population had a higher score for Physical, Social relationship and Environmental domains compared to rural geriatric population. The rural population had better mean score for Psychological domain. With respect to overall perception of Quality of Life & health status, the geriatric population residing in rural areas fared better compared to urban geriatric population. The difference was however not found to be statistically significant ($p<0.05$).

Table 2: Quality of Life (QOL) of the geriatric population in relation to place of residence (n=263)

Domains of QOL		Rural	Urban	Total	4-20 scale
Physical	Mean	51.35	51.61	**51.44**	**12.09**
	SE	0.91	1.02	0.69	0.11
	SD	11.96	9.70	11.21	1.85
Psychological	Mean	51.38	48.72	**50.46**	**12.06**
	SE	0.82	0.67	0.59	0.09
	SD	10.72	6.39	9.52	1.54
Social relationship	Mean	50.05	55.95	**52.09**	**12.26**
	SE	1.05	1.27	0.83	0.12
	SD	13.71	12.13	13.46	2.13
Environmental	Mean	46.82	54.57	**49.50**	**11.83**
	SE	0.91	1.02	0.73	0.11
	SD	11.90	9.69	11.76	1.83
Perceived overall QOL	Mean	57.70	49.73	**54.96**	-
	SE	1.53	1.77	1.20	-
	SD	20.11	16.87	19.40	-
Perceived overall health status	Mean	59.30	50.00	**56.08**	-
	SE	1.79	2.10	1.40	-
	SD	23.43	20.07	22.72	-

SE - Standard Error, SD - Standard Deviation

Table 3 depicts the quality of life in the geriatric population in relation to gender. The total number of female subjects was 144 (54.75%) and 119 (45.25%) male subjects. As per the observations of the current study male subjects had a higher mean score in all four domains of QOL (i.e. Physical, Psychological, Social relationship and Environmental domain**)** compared to female subjects. However, statistically significant difference was observed only for the Social relationships domain where the mean score for the males was 54.62 and for females were 50.00.

Table 3: Quality of Life (QOL) of the Geriatric population in relation to gender (n=263)

Domain		Male	Female	MD*	p value
Physical Domain	MEAN	52.64	50.45	2.19	0.114
	SE	1.06	0.90		
	SD	11.55	10.86		
Psycholical Domain	MEAN	51.19	49.86	1.33	0.270
	SE	0.98	0.70		
	SD	10.74	8.37		
Social Relationship Domain	MEAN	54.62	50.00	4.62	0.005
	SE	1.22	1.10		
	SD	13.32	13.26		
Environment Domain	MEAN	50.63	48.57	2.06	0.146
	SE	0.89	1.10		
	SD	9.76	13.15		
Perceived overall QOL	MEAN	56.72	53.47	3.25	0.177
	SE	1.88	1.53		
	SD	20.51	18.37		
Perceived overall health status	MEAN	55.04	56.94	-1.9	0.500
	SE	2.20	1.80		
	SD	24.05	21.61		

SD - Standard Deviation, SE - Standard Error, MD - Mean Deviation

Discussion

Majority of the subjects in our study belonged to the age group of 60-64 years. Overall the female subjects were greater in number. The predominant religion was Hinduism. A study conducted among geriatric population of Meerut by Charan S et al showed similar findings with respect to age, religion and gender composition[6]. The present study revealed that a considerable proportion of about 42% geriatric populations were living alone without any life partner. This finding is very similar to that of a previous study by Sashi K et al in 2002 that found 39% of the geriatric population was living alone[7]. The present study shows that 50.5% of the elderly subjects were illiterate. Previous studies have also reported a literacy rate between 65% - 80% [6, 7]. Financial independence in our study was found to be 27.8%. A previous study by Goel et al had reported a slightly higher figure of 41.5% for financial independence[8].

In the present study mean QOL scores for the four domains were: Physical domain: 12.09 (SD ±1.85), Psychological domain: 12.06 (SD ± 1.54), Social relationship domain: 12.26 (SD ±2.13), Environmental domain: 11.83 (SD ± 1.83). A previous study in Taiwan by Chang H T et al using WHOQOL-BREF to assess QOL also had similar findings with mean scores of 13.98 (SD ± 2.16) for Physical domain, 13.10 (SD ±2.40) for Psychological domain, 13.53 (SD ± 2.54) for Social Relationships[9]. The findings were similar to that of our study.

In the present study urban geriatric population had a higher score for Physical, Social relationship and Environmental domains compared to rural geriatric population. A previous study on QOL in the geriatric population at Wardha, Maharashtra had reported that elders living in rural community had a significantly lower level of QOL in social relationship domain (55.9±2.7) and environmental domain (57.1±3.2) than urban population[10]. This difference between urban and rural inhabitants can be attributed to difference in socio-demographic factors, social resource, lifestyle factors and income adequacy. Another study on comparison of quality of life among elderly people in rural and suburban areas in Thailand found that subjects from suburban areas had a higher quality of life in respect to physical health (p = 0.011) and social relationships (p = 0.012). However, the factor of environment did not differ[11]. The reason for urban elderly scoring high on social relationship domain could be due to urban elderly being actively involved in some groups that give them opportunity to socialize themselves. Also physical safety and security, home environment, financial resources, health care availability and quality of social care being very high in urban areas, hence urban elderly report high on environment. A previous study by Tawatchai Apidechkul reported that the elders living in rural area have significantly higher level of

Quality of Life in the domains of physical (51.2 . ±7.1) score and psychological (51.3 ±7.12) score than the urban elderly populations[11]. In the present study also rural population had better mean score for Psychological domain. Reason for this could be the fact that the rural elderly enjoy the power and have positive feeling about future due to traditional rituals.

As per the present study male subjects had a higher mean score in all four domains of QOL compared to female subjects. However, statistically significant difference was observed only for the Social relationships domain. A previous study by Tawatchai Apidechkul also reported that on comparing quality of life factors between sexes by area only social relationships (p = 0.011) among females was significant[11]. Barua A et al in their study on Quality of Life (QOL) among geriatric subjects in Karnataka using WHOQOL- BREF had also reported almost similar mean scores for male and female in all four domains without any statistical difference[12].

Conclusion

A considerable proportion of geriatric subjects are illiterate, financially dependent &widowed. Quality of Life (QOL) varies with place of residence and sex. The urban geriatric population had a better QOL for Physical, Social relationship and Environmental domains whereas rural population fared better on Psychological domain. Overall perception of QOL was better for geriatric population in rural areas and male subjects.

Limitation of the study:

The study being self financed suffers from financial constraints. Inclusion of a few more urban wards and villages could have yield a much clearer picture of QOL among the geriatric population of the study region. Although care was taken to ensure that the villages and urban wards selected via multistage sampling were representative of urban and rural areas of the region as a whole.

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Medical Needs Assessment of Persons with Locomotor Disability in a Rural area in Karnataka.

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Abstract:

Introduction: It is estimated by WHO that 5% of the population has one or other kind of disability in developing countries. In our country Disabled persons constitute about 2 per cent of the total population. Among the different types of disabilities, the prevalence of locomotor disability was highest in the country – it was 1046 in the rural and 901 in the urban per 100000 persons. Medical needs are one of the most common needs concerning disabled people in the developing countries So if the medical need is properly given to them the other needs will be automatically met to some extent. **Aim:** To assess the medical needs of the persons living with locomotor disability in Kaiwara PHC area. **Methodology: Study area:** Kaiwara Primary Health Centre, the rural training centre attached to Department of Community Medicine, M S Ramaiah Medical College. **Study population**: All the persons with locomotor disability coming under Kaiwara PHC area. **Study Period**: October 2006 – December 2006. **Study design**: Cross sectional **Results & Discussion:** In the present study the prevalence of locomotor disability was 0.33% and the distribution among the sexes was almost same. It was noted that the common cause of disability in the present study was congenital deformities and Congenital Talipes Equino Varus accounting for 20.2%. Fracture of limbs (18.3%) not treated properly was the single most common cause of disability in this study. In the present study 34 persons required surgeries like tendon lengthening, arthrodosis to improve their mobility; 18 persons required various physiotherapy exercises to improve the tone and the power of the muscles; 13 persons required various aids and appliances like crutches, artificial limbs, wheel chairs, special shoes to improve their mobility and quality of life.

Key words : medical needs, locomotor disability, rural area

Introduction:

A person with restrictions or lack of abilities to perform an activity in the manner or within the range considered normal for a human being was treated as having disability. It excluded illness/injury of recent origin (morbidity) resulting into temporary loss of ability to see, hear, speak or move .[1]

It is estimated by WHO that 5% of the population has one or other kind of disability in developing countries .[2,3] Disabled persons often suffer from discrimination, because of prejudice or ignorance and also may lack access to essential services. Disabled persons constitute about 2 per cent of the total population in our country. In order to evolve a successful programme for social integration of the disabled, information relating to their magnitude, type of disability, age at onset of disability, possible cause of disability, etc. is very essential. About 8.4 per cent and 6.1 per cent of the total estimated households in rural and urban India respectively reported to have at least one disabled person. The

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number of disabled persons in the country was estimated1 to be 18.49 million during July to December, 2002. They formed about 1.8 per cent of the total population. For every 100000 people in India, there were 1755 who were either mentally or physically disabled. Among the rural residents, the prevalence of disability was 1.85 per cent and that among the urban, it was 1.50 per cent. The rate for males was 2.12 and 1.67 per cent while that for females was 1.56 and 1.31 per cent in rural and urban India respectively. The prevalence rate of disability in Karnataka was 1750 and 1500 per 100000 in rural and urban areas respectively [4]. Among the different types of disabilities, the prevalence of locomotor disability was highest in the country – it was 1046 in the rural and 901 in the urban per 100000 persons. This was followed by visual disability and hearing disability. According to National Sample Survey 58th round (July-December 2002) about 69 persons per 100,000 were either born disabled or became disabled for some reasons in India during the last 365 days. The incidence rate was higher among males than that of females [5]. The first and foremost need concerning disabled people in a developing country is the medical need. Since very few studies have been done in India on disabled people, so this study was taken up by keeping that in mind to assess the medical needs among the disabled people in a rural area in Karnataka.

Aim: To assess the medical needs of the persons living with locomotor disability in Kaiwara PHC area.

Methodology: Study area: Kaiwara is a small town situated at a distance of 65 kilometers from Bangalore city in the Chintamani Taluk of Chikkaballapur district, Karnataka, India. Kaiwara Primary Health centre (PHC) caters to a population of 32772 scattered over 36 villages. Kaiwara Primary Health Centre is the rural training centre attached to Department of Community Medicine, M S Ramaiah Medical College and is utilized for Intern's rural training and also as field practice area for under-graduate and post graduate students. **Study population**: All the persons with locomotor disability enlisted by respective Anganwadi workers of the 36 villages coming under Kaiwara PHC administrative control. **Study Period**: October 2008 – December 2008. **Study design**: Cross sectional

Method of data collection: A study team consisting of specialist from department of Orthopedics, Physiotherapy and Community medicine visited the households of persons with locomotor disability in each of the 36 villages along with the respective Anganwadi teachers and carried out a detailed physical examination of the person with locomotor disability and arrived at probable cause of the present disability and later advised them regarding treatment, surgery, physiotherapy, aids and appliances to improve the quality of life.

Results:

Table 1: Age and sex wise Distribution of the study population

Age	SEX		Total (%)
	Male	Female	
0-5	3	1	4(3.66)
6 – 10	4	3	7(6.42)
11-15	4	3	7(6.42)
16 - 20	2	5	7(6.42)
21 - 25	6	4	10(9.17)
26 – 30	3	9	12(11)
31- 35	1	10	11(10.09)
36 – 40	5	4	9(6.42)
41 – 45	5	3	8(7.33)
46 – 50	7	1	8(7.33)
51 - 55	7	2	9(10.09)
56 – 60	5	2	7(6.42)
61 – 65	3	0	3(2.75)
66 – 70	4	1	5(4.58)
71 – 75		1	1(0.91)
>75		1	1(0.91)
	59	**50**	**109(100)**

Table 2: Distribution of the study population according to the interventions advised

Interventions advised	No.
Number of patients referred to surgery	34
Number of patients referred to physiotherapy	18
Number of patients referred to aids and appliances	13
Total	**65**

Table 3: Distribution of the study population according to type of locomotor disability

Diagnosis	Frequency	%
Fractures	20	18.3
Post Polio Residual Paralysis	15	13.8
Congenital deformities	12	11.0
Arthritis	11	10.1
CTEV	10	9.2
Equinus deformity	5	4.6
Cerebral Palsy	4	3.7
Amputated limbs	4	3.7
Acquired dislocation	4	3.7
Hemiplegia	4	3.7
Foot drop	3	2.8
Muscular dystrophy	2	1.8
Contractures	2	1.8
Erbs palsy	2	1.8
leprosy with limb deformity	2	1.8
Flat foot	2	1.8
Hemi paresis	1	0.9
Others	6	5.5
Total	**109**	**100.0**

Discussions:

In the present study the prevalence of locomotor disability was 0.33% and the distribution among the sexes was almost same.

It was noted that the common cause of disability in the present study was congenital deformities and Congenital Talipes Equino Varus accounting for 20.2%. If an early identification and effective referral system can be established the quality of life of these persons can be improved by instituting appropriate rehabilitation services like either corrective surgery or providing them with aids and appliances. Fracture of limbs (18.3%) not treated properly was the single most common cause of disability in this study and this is due to non availability of specialized medical services at the primary health centre level, also due to the fact that these persons have approached the traditional healers to reduce the fracture which has lead to either malunion or non union of these fractures.

Post polio residual paralysis (13.8%) was the next common cause of locomotor disability. Interestingly the Post Polio Residual Paralysis was noted in the age groups of 14 years and above. The efforts of our government to prevent paralytic polio from the last decade through routine immunization and Pulse Polio Immunization was observed to have had a positive impact in considerably preventing the disability due to this vaccine preventable disease in younger age group. Even though the disability caused by Post Polio Residual Paralysis can be reduced by surgeries, not many were ready to give their consent for the surgery. This is because the person has to undergo repeated surgeries resulting in long stay in the hospitals and frequent visits to be made to the hospitals for physiotherapy. So this may lead to loss of wages both to the person affected and the accompanying attendant.

Arthritis (10.1%) was another cause of disability in the present study. This morbidity had caused severe restriction of movements of these people and also had an impact on loss of earning capacity among these people. Thus there was a need for instituting a system for demystifying specialized physiotherapy skills and transfer of the same to the health worker with in the primary health care system so has to have an impact at the community level for this disability..

This needs to be followed up in order to provide surgical services such as soft tissue release, tendon lengthening, Illizarov technique, tenotomy, reconstruction of the joints, corrective osteotomy, open/closed reduction, tendon transfer and joint replacement by specialist at tertiary care facilities.

Despite our government providing aids/appliances to these persons through various schemes the acceptance is high initially but once the aids/appliances has to be either serviced or repaired there is no place to approach or may be our common places of visit like schools, colleges, hospitals, temples are not disabled friendly and do not have proper access in terms of lift/ramp for persons with disability leading to non use of their aids/appliances. This observation confirms with the findings of a study conducted in Poland where it was noted that the provision of orthopaedic and rehabilitation equipment, as well as of auxiliary aids, was highly insufficient from the aspect of both quality and quantity [6].

The other cause of disability in this present study was due to Cerebral Palsy probably as a result of poor intranatal care as high number of births conducted at home by untrained personnel. These disabilities if identified in its initial stages and appropriate interventions applied, at least the quality of life can be improved among them.

In the present study 34 persons required surgeries like tendon lengthening, arthrodosis to improve their mobility; 18 persons required various physiotherapy exercises to improve the tone and the power of the muscles; 13 persons required various aids and appliances like crutches, artificial limbs, wheel chairs, special shoes to improve their mobility and quality of life.

Gaps identified in the present study:

a. Health care gap: Identification and prevention of disabilities is not an extra burden thrust upon our health care system but it is inbuilt in our service delivery like provision of essential new born and infant care which will prevent considerable number of disabilities. Early identification and establishing a prompt referral system to higher centers will improve the quality of life of these people.
b. Social gap: The social discrimination and isolation of persons with disabilities is still high in the community and these attitudes among the community need to be changed to get these persons with disability in to the social mainstream.
c. Rehabilitation gap: Despite the government providing aids/appliances to the persons with disability through various schemes, the acceptance is good, but once the aids/appliances has to be either serviced or repaired there is no place to approach. In common places of visit like schools, colleges, hospitals, temples were not disabled friendly and did not have proper access in terms of lift/ramp for persons with disability leading to non use of their aids/appliances.

CONCLUSION:

In the present study the congenital deformities, fractures, post polio residual paralysis and Arthritis are the common causes of disability of which 1/3rd of these disabilities could have been prevented by good immunization and specialized care for Polio and fractures respectively. The needs of the persons with locomotor disability varies as the duration of the disability progresses, like a parent with a child with locomotor disability, their priority is to get their child treated for the disability where as an adult person with locomotor disability his / her priority will be to get rehabilitated either vocationally or socially rather than medically because they might have already learnt to live with their disability.

RECOMMENDATIONS:

- Strengthening routine immunization against Vaccine preventable diseases
- Strengthening referral services from PHC to higher centers for specialized care
- Community Based Rehabilitation as a approach for rehabilitation
- Changing the attitude of people towards Persons with disabilities
- Strengthening the primary health care system to prevent the people from accessing care from traditional healers especially for conditions like injuries/falls.

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Risk Factors of Non-Communicable Diseases in an Urban Locality of Andhra Pradesh.

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ABSTRACT

Background: Chronic non-communicable diseases (NCDs) have replaced communicable diseases as the most common causes of morbidity and premature mortality worldwide. **Objectives:** To estimate the risk factors of NCDs in an urban locality of India. **Methods:** This cross sectional study was conducted in an Urban Nellore city during 2008-09. The sample size was 933 in the age group of 25-64. Simple random sampling methods used for selecting household and one member from each house. Risk factors were recorded. **Results:** The prevalence of current Smoking and alcoholism were 8.15%[95% CI:6.5%-10.1%] and 4.93%(95% CI:3.7%-6.5%) respectively in both sex. Only 5.14% and 10.5% were consuming more than five servings of fruits and vegetables respectively per day .The prevalence of abdominal obesity was 46.62% using South Asian guidelines and 48.12% obese as per BMI. Low physical activity was recorded in 28.40% of people. The prevalence of hypertension was 29.3 %[95% CI:26.4%-32.3%] (M:30.9% & F: 27.7%). **Conclusion:** Policies with multiple integrated approaches are needed to prevent, detect and treat the NCDs effectively in India.

Keywords: NCD, Risk Factor, Nellore, Prevalence, Body Mass Index.

Introduction:

Non-communicable diseases (NCD) are serious threat to the health of people in developing countries. In 2008, 60% of all deaths in the world, a total of 38 million people, died from the four main NCDs: cardiovascular diseases, diabetes, cancers and chronic respiratory diseases. [1] Risk is defined as "a probability of an adverse outcome, or a factor that raises this probability". Risk assessment is defined as "a systematic approach to estimating the burden of disease and injury due to different risks". It involves the identification, quantification and characterization of threats to human health.[2]

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Common, preventable risk factors underlie most NCDs. These risk factors are a leading cause of the death and disability burden in nearly all countries, regardless of economic development. The leading risk factor globally for mortality is raised blood pressure (responsible for 13% of deaths globally), followed by tobacco use (9%), raised blood glucose (6%), physical inactivity (6%), and overweight and obesity (5%).In India Age-standardized death rate per 100 000 due to NCD was 782 in males and 571 in females.[3]

NCDs are largely preventable by means of effective interventions that tackle shared risk factors, namely: tobacco use, unhealthy diet, physical inactivity and harmful use of alcohol. In addition, improved disease management can reduce morbidity, disability, and death and contribute to better health outcomes. [4] Understanding the role of these risk factors is the key to developing a clear and effective strategy for

improving community health.[5] Hence this community based study on risk factors of non-communicable diseases was taken up.

Material and Methods:

This cross sectional study was conducted in field practice area of Urban Health Centre, Saraswathi Nagar, Narayana Medical College, Nellore, Andhra Pradesh. This study was conducted from June 2008 to May 2009 after Institutional Ethics Committee approval. The sample size of 933 was calculated using the prevalence rate of 16%[a] with 15% acceptable (allowable) error at 95% confidence level. Both males and females aged more than 24-64 years included and pregnant women were excluded. If people who migrated from rural area were included once they completed 6months of life there.

A proforma was devised by using STEPS approach of WHO questionnaire and household & individual questionnaire of non-communicable disease risk factor survey prepared by Integrated Disease Surveillance Project (IDSP) and ICMR, New Delhi. Necessary corrections were made in it, after pre-testing the proforma by doing a pilot study among 30 individuals. The questionnaire contains two parts. In first part socio demographic data of the family were collected. The second part individual data were collected. The variables used in this study are height and weight, diet (Veg./mixed),physical activity, Habits – Drugs/smoking / Alcohol , Family h/o hypertension , CHD, stroke, H/o of any non communicable disease like diabetes any medications used, extra salt intake, parental history of hypertension and OCP use in females.

The sampling unit for the study was a household. Firstly 950 houses were selected from 5902 houses by randomly by creating random numbers by World Wide Web (www.random.org). The selected houses were included for present study. If the selected house was closed, next house in the list was selected. From each house one eligible person is selected for study by using random table. In houses had more than one eligible person, one person was selected by random method. Data collection was done, after obtaining informed consent.

Height and weight were measured by using stadiometer and calibrated weighting machine respectively. Weight was measured with. Body mass index (BMI) was calculated using the formula: weight (Kg)/height (m^2). Waist was measured using a non-stretchable fiber measuring tape. The subjects were asked to stand erect in a relaxed position with both feet together on a flat surface; one layer of clothing was accepted. Waist girth was measured as the smallest horizontal girth between the costal margins and the iliac crests at minimal respiration.[6]

Measurement of blood pressure (BP) was carried out on each participant by using the standard technique.[7] Before BP measurement; it was made sure that the subjects had not consumed either tea or coffee, smoked or exercised vigorously in the last 30 min. Both blood pressure measurements were recorded after the subject had rested for atleast5 min in a sitting position. It was measured in left arm in the sitting position on the upper arm with the arm supported, with the palm facing upward and sphygmomanometer at the level of the heart by using appropriate cuff size. The average value of two consecutive BP readings was taken. In case where the initial two readings differ by over 10mm of mercury, a third reading was obtained and the last two measurements were averaged.[6] All the instruments had been calibrated daily before starting the survey.

The diagnosis and classification of hypertension was done according to the JNC-VII report.[8] Generalized obesity was defined using the new WHO Asia Pacific guidelines i.e. BMI $\geq$25 kg/m^2 and abdominal obesity as waist circumference $\geq$90 cm for men and $\geq$80 cm for women. [9]

The data of this study was analyzed by using standard statistical package. A measure of central tendency was used to quantify risk factors. Charts and tables were prepared using Microsoft Excel. P value<0.05 was considered as significant.

Results:

Among 933 study subjects, 463 (49.6%) were males and 470 (50.4%) were females. Age and sex distribution of study subjects is shown in Figure- 1.

Figure 1. Bar diagram showing Age and Sex distribution of study subjects

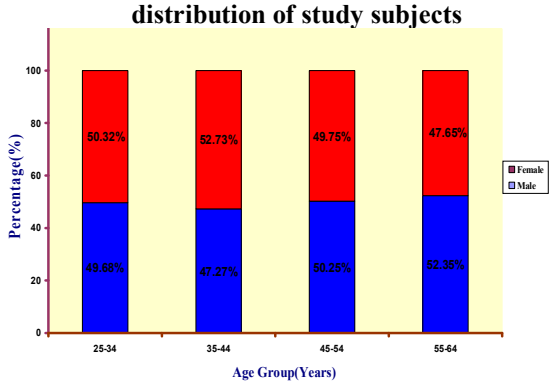


Table 1.Risk factors of Study Subjects (n=933)

Risk Factors	Present (%)	Absent (%)
Current smoking	76(8.15)	857(91.85)
Current Alcoholic	46(4.93)	887(95.70)
Vegetable Intake <5 serving	835(89.50)	98(10.50)
Fruits intake <5 serving/day	885(94.86)	48(5.14)
Extra Salt intake	595(63.77)	338(36.23)
Waist Circumference-Obese	435(46.62)	498(53.38)

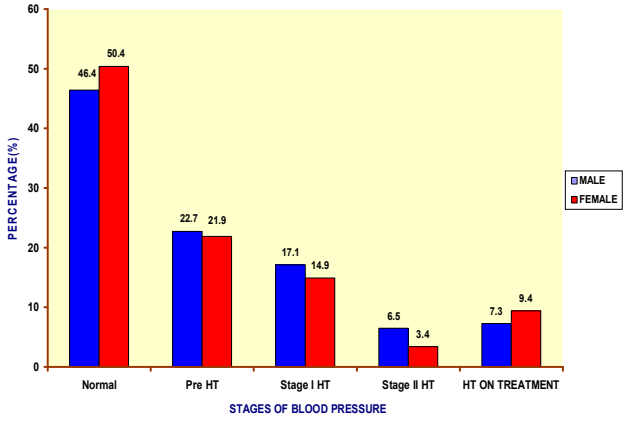
Smokers were 76(95% CI: 6.5%-10.1%) and among them 80% smoking more than 10 years. Among males 16% were smokers. There were 46(95% CI: 3.7%-6.5%) subject found to be current alcoholic. The mean number of servings of vegetable per day was 2.72. Only 98(95% CI: 8.7%-12.6%) persons consumed more than five servings. The mean number of servings of fruits per day was 1.36. Only 48(95% CI: 3.9%-6.8%) study subjects were consumed more than five servings of fruits per day. Extra salt was consumed by 595(95% CI: 61%-67%) subjects. And 435(95% CI: 43.4%-49.8%) study subjects who were detected having abdominal obesity by waist circumference (Table 1).

Table 2.Quantification of BMI and physical activity of study subjects (n=933)

BMI	Number of subjects (%)	Physical Activity	Number of subjects (%)
Obese	449(48.12)	**High**	216(23.15)
Overweight	171(18.33)	**Moderate**	452(48.45)
Normal	313(33.55)	**Low**	265(28.40)

As per Table 2, 449(95% CI:44.9%-51.33%) were obese and 171(95% CI:15.9%-20.9%) overweight. And this study identified 265(95% CI: 25.6%-31.4%) persons with low and 452(95% CI:45.2%-51.66%)moderate physical activity.

Figure 2. Bar diagram showing prevalence of hypertension of study population(n=933)



And 273 found to be hypertensive and giving the prevalence of hypertension 29.3 %;95% CI:26.4%-32.3%(Male:30.9%& Female:27.7%). Among hypertensives 149(54.58%) had stage I hypertension, 46(16.85%) had stage II hypertension and 78(28.57%) had already diagnosed as hypertensives and on anti hypertensive medication. Among study subjects 208(22.3%) were in the stage of pre-hypertension (Figure 2).

DISCUSSION:

Overall, NCD risk factors were prevalent across all the socioeconomic and demographic categories of Study population. Tobacco use alone accounts for

one in six of all deaths resulting from NCD's[10].The prevalence of current daily use of smoked tobacco was 8.15% in both sex and 16% in males. The smoking prevalence was around 22% in males in Haryana study.[11] The percentage of current daily smokers varied between a low 9% in Maharashtra and high 42% in Mizoram.[12] As per the Global Adult Tobacco Survey (GATS-India) 2009-10 the prevalence of tobacco use among adults (15 years and above) was 35%.[10]

Alcohol is a risk factor for oesophageal cancer, liver cancer, cirrhosis of the liver, homicide, stroke, psychiatric illness and motor vehicle accidents worldwide.[10] In the current study the prevalence of alcoholism was 4.93%. Community based studies have reported that alcohol use ranges between 25% and 40% in north India and 33% and 50% in south India.[10] In IDSP survey the percentage of the respondents reported to have consumed alcohol in past 12 months ranged from a low 11% in Mizoram to high 20% in Andhra Pradesh.[12]

Among dietary components, fruits and vegetable are protective against several NCDs but their intake is grossly inadequate among Indians.[10] Only 5.14% and 10.5% were consuming more than five servings of fruits and vegetables respectively per day in the present study. The percentage of respondents of IDSP study consumed less than five servings of fruits and vegetables per day ranged from a low 76% in Maharashtra to high 99% in Tamil Nadu.[12]

The lack of physical activity leads to obesity, hyper-lipidemia, diabetes mellitus, hypertension, and coronary heart disease.[12] Low physical activity was recorded in 28.40% of people in this study. The proportion of respondents reporting low physical activity was lowest (42%) in Madhya Pradesh and highest (81%) in Maharashtra.[12]

Obesity is considered to be the link between insulin resistance and metabolic abnormalities inclusive of diabetes, hypertension and dyslipidaemia, all of which are risk factors for coronary artery disease.[13] The prevalence of abdominal obesity was 46.62% using South Asian guidelines and 48.12% obese as per BMI, in this study. Almost 30-65% of adult urban Indians were reported to be either overweight (BMI>=25) or obese (BMI>=30) or have central obesity.[10]

In present study, the overall prevalence of hypertension was 29.3%. Pooling of epidemiological studies shows that hypertension was present in 25% urban and 10% rural subjects in India.[10]

This study concentrated only the behavioural and anthropometric risk factors of major NCDs only. Bio-chemical indicators and risk factors of other NCDs were not included in this study.

WHO has developed a new goal in 2005 of "to reduce death rates from all chronic diseases by 2% per year over and above existing trends during the next 10 years". A comprehensive approach would be required for both prevention and management of NCDs in the country. It is proposed in 12th five year plan to expand various schemes for NCDs to all 640 districts in a phased manner including screening and treatment of NCDs and Legislation, Population based interventions, Behaviour Change Communication using mass media, mid-media and interpersonal counselling and public awareness programmes of NCDs in different settings.

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ORIGINAL RESEARCH ARTICLE

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Prevalence and Pattern of use of Complementary and Alternative Medicines by the patients with Diabetes,attending a Tertiary care centre in Salem, Tamil Nadu.

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ABSTRACT

BACKGROUND: Diabetes is one of the most common chronic diseases affecting nearly 30% of Indian population. Diabetic individuals seek the use of complementary and alternative medicine due the chronicity of the disease and fear of side effects of allopathic drugs. Hence a study was done to know the Complementary & Alternative Medicines (CAM) used by the diabetic patients attending a tertiary care centre, in Salem, Tamil Nadu. **OBJECTIVES:** To know the prevalence and pattern of use of Complementary & Alternative Medicines by the diabetic patients attending a tertiary care centre, in Salem, Tamil Nadu and To know how socio-demographic factors influences the use of Complementary & Alternative medicines in diabetic Patients. **MATERIALS AND METHODS:** It is a Cross-sectional study, conducted during October 2011 to December 2011.A sample of diabetic patients (type 1 and type 2) attending Vinayaka Mission Hospital, outpatient department, in the diabetic clinic during this three months were study subjects, comprising of 134.They were interviewed using a pre-tested structured questionnaire to collect data on their history of diabetes, its duration, treatment history, use of Complementary & Alternative Medicines and socio-demographic history. **RESULTS:** It was observed that, the prevalence of diabetic patients using Complementary & Alternative Medicines was found to be 70.1%. Most common indigenous medicines used are karela juice, methi, neem leaves, diabetic herb, homeopathic medicine, native powder. It was found that demographic variables such as age, duration of diabetes, and occupation had direct influence for the intake of CAM.**CONCLUSION:** A systematic study of use of Complementary & Alternative Medicines among diabetic patients is necessary, as some of them can interfere in glycemic control along with proven toxicities for the patient.Hence the patient needs to understand the use of the correct medicines to keep their diabetes status under control.

KEY WORDS: Diabetes, Complementary & alternative medicines, Tertiary care centre.

INTRODUCTION

Diabetes is one of the most common chronic diseases affecting nearly 30% of Indian population. World Health Organization states that there will be around 350 million diabetic individuals by the year 2030. [(1)]

Despite recent advances in care and management, diabetes mellitus continues to be an important public health concern causing substantial morbidity and mortality along with long term complications.[(1)] At the same time, care of persons with diabetes has been influenced by a growing interest in complementary and alternative medicines.[(2,3)] **C**omplementary and alternative medicine (CAM) refers to a wide range of clinical therapies outside of conventional medicine. [(4)] The term "complementary" refers to therapies that are used in conjunction with conventional medicine, whereas "alternative" medicine includes therapies that are used in place of conventional

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medicine. CAM therapies are attractive to patients because it aids in self empowering, participatory approaches to care.[4] This practice among diabetics, may be due to the general fear about the side effects of antidiabetic drugs used in the modern system of medicine.Further they are reluctant to use insulin injections and they presume that CAM are safe and offer cure . [5] Hence a study was done, to know the pattern of use of complementary and alternative medicine in diabetic patients attending a tertiary care centre, in Salem, Tamil Nadu.

OBJECTIVES:

1. To know the prevalence and pattern of **C**omplementary and alternative medicine (CAM) therapy in diabetic patients attending a tertiary care centre, in Salem, Tamil Nadu.
2. To know, how socio-demographic factors influences the use of CAM therapy in diabetic patients.

MATERIALS AND METHODS

It is a Cross-sectional study, conducted during October 2011 to December 2011.A sample of diabetic patients (type 1 and type 2) attending V.M.K.V.M.C.H, outpatient department in the diabetic clinic during this three months were study subjects ,which comprised to 134. The patients were randomly selected and interviewed using a pre-tested structured questionnaire to collect data on their type of diabetes, duration of diabetes, treatment history, use of Complementary & alternative medicines, their pattern of use and socio-demographic history. They were enquired about the frequency of use of CAM, duration of use of CAM therapy , their source of motivation , belief about the medication and any change in glycaemic control.

ANALYSIS:-

Statistical tests like Proportions and Chi-square test was used.

Data was tabulated on Microsoft excel sheets and analyzed using software SPSS

RESULTS

It was observed that, out of 134 diabetic patients who were interviewed, it was found that about 94 patients (70.1%) of them were found to use Complementary and alternative medicines.(Table1).

Table 1—The baseline data of diabetic subjects

Demographic variable	Values (n=134)
Number of diabetic patients using CAM	94 (70.1%)
Age in years(mean±SD)	41.10±1.77yrs
Sex (male:female)	62(46.3%):72(53.7%)
Type of diabetes(type1/type 2)	3(2.2%)/131(97.8%)
Treatment type (Oral antidiabetic/insulin/both)	85(63.4%)/26(19.4%)/ 23(17.2%)
Duration of diabetes(mean±SD)	4.7±2.77 yrs

Table 1 describes the distribution of 134 diabetic patients,who were in the age group ranging from <30yrs to 70yrs,the mean age of the subjects were 41.1yrs±SD of 1.77yrs.The total number of males were 62(46.3%)and females were 72(53.7%).The number of subjects having Type 1 diabetes mellitus were 3(2.2%) and those with type 2 diabetes mellitus were 131(97.8%).The number of subjects using oral hypoglycaemic drugs were 85(63.4%),insulin 269(19.4%) and both were 23(17.2%).The mean duration of diabetes was 4.7±SD of 2.77yrs .(n=134)

Table:2 Pattern of use of Complementary and alternative medicine(CAM) among diabetic patients

CAM MEDICINE	NO: OF PATIENTS (%) (n=94)*
Karela juice	57 (60.6%)
Methi	40 (42.6%)
Neem	27 (28.7%)
Homeopathic medicine	16 (17%)
Diabetic herb	12 (12.8%)
Indigenous medicine (Tablets/Powder)	8 (19.1%)

*More than one type of CAM was used.

Table 2 shows various complementary and alternative medicines that were popularly used by the 94 diabetic patients such as Karela juice 57(60.6%) , Methi 40(42.6%) , Neem27(28.7%) , Homeopathic medicine 16 (17%) , Diabetic herb 12(12.8%) and Native powder or indigenous medicines 18(19.1%) .Most of the patients use more than one modality of treatment.(n=94).

The frequency of intake of the CAM, by the diabetic patients was studied,and it was found that majority , 37(39.4%) took them intermittently and about 36(38.3%) patients took them regularly and 21 (22.3%) took them once in a while.(n=94) Table (3).

Table 3: Frequency of intake of Complementary and alternative medicine by the diabetic patients

FREQUENCY	NO OF PATIENTS (%)(n=94)
Regular	36 (38.3%)
Intermittent	37 (39.4%)
Once a while	21 (22.3%)

The persons responsible for motivating the diabetic patients to use CAM were fellow diabetics in 39(41.5%) patients, relatives in 38(40.4%) patients, neighbours in 21(22.3%) patients, news papers and other media in 13 (13.8%)patients.(n=94) Table (4).

Table 4: Sources for motivation of the diabetic patients to use CAM

MOTIVATING PERSONS	NO OF CASES(%)(n=94)*
Fellow diabetics	39 (41.5%)
Relatives	38 (40.4%)
Neighbours	21 (22.3%)
News paper and other media	13 (13.8%)

*More than one source of motivation were present

More than one source of motivation for the use of CAM was found among the diabetic subjects.

After 2 months of intake of indigenous medicines, the blood glucose level was monitored and recorded. After the intake of indigenous medicine 19 (20.2%) patients felt that their glycemic control was better, 30(31.9%) felt that there was no change and 45(47.9%) were not sure of any change.(n=94) Table (5).

Table 5: Changes noticed by the patients during or after the use of CAM

CHANGE NOTICED CASES(%)(n=94)	NO OF
Better glycaemic control	19 (20.2%)
No change	30(31.9%)
Not sure	45 (47.9%)

Table 6: Socio-demographic profile of the Diabetic patients using CAM

	No. of diabetic patients	Diabetic patients using CAM No (%)	Level of significance
Age group			
<30YRS	3	0 (0)	
30-40	71	44(62.0)	Z=2.36,
40-50	39	32(82.0)	P<0.05
50-60	12	10(83.3)	
60-70	9	8 (88.9)	
Sex			
Male	62	41(66.1)	x^2 =0.155
Female	72	53(73.6)	P < 0.50
Type of diabetes			
Type 1	3	0(0)	x^2 =3.601
Type 2	131	94 (71.8)	P < 0.10
Duration of diabetes			
< 5 years	78	67(85.9)	x^2 = 5.225
5-10 years	30	18 (60.0)	P < 0.05
10-15 years	26	9(34.6)	
Education status			
Illiterate	42	38(90.5)	
Primary school	32	26(81.3)	x^2 = 5.345 P < 0.10
High school	36	22(61.1)	
Graduate	24	8(33.3)	
Occupation			
Skilled worker	45	18(40.0)	x^2 = 5.997 P < 0.05
Semi skilled worker	31	24 (77.4)	
Unskilled worker	58	52 (89.7)	
Type of treatment			
Oral hypoglycemic drugs	85	69(81.2)	x^2 =1.904 P < 0.50
Insulin	26	15 (57.7)	
Both	23	10 (43.5)	

Table 6,shows various socio-demographic factors influencing the intake of CAM among diabetic patients.As age increased, the use of CAM for diabetes also increased,which was found to be statistically significant. It was found that among diabetic patients below 30 yrs,none of them used CAM. Whereas among those in the age group of 30 to 40 years, 44 (62%) persons; between the ages of 40 to 50 years 32(82%) ; between 50 to 60 years 10 (83.3%) and between 60 to 70 years 8(88.9%) were found using CAM.($p<0.05$)

It is found that among females 53 (73.6%) were using CAM as compared to males who were 41 (66.1%),which was not statistically significant.($p<0.50$) [Table 6]

In relation to the type of diabetes, it was found that all 94 diabetic patients using CAM belonged to type 2 Diabetes mellitus. ($p<0.10$)[Table 6]

The prevalence of use of CAM in relation to duration of diabetes was found that among those ,who had diabetes of less than 5 yrs duration, majority of the subjects 67(85.9%) used CAM, and it showed a decrease in trend, with increase in duration of diabetes. ($p<0.05$)[Table 6]

The prevalence of the use of CAM was more common among illiterate patients of 38(90.5)% and it showed a decreasing trend with increase in level of education. ($p< 0.10$)[Table 6]

The prevalence of use of indigenous medicine according to the occupation of the patients was studied. This showed that 18 (40%)patients among those of the skilled workers, used CAM. Among semi skilled 24(77.4%) used CAM and among unskilled like coolie,vendor etc 52(89.7%) used CAM. This shows us that as the occupation of people became more and more skilled the use of indigenous medicine decreased , and is found to be statistically significant ($p<0.05$) [Table 6].

The use of CAM was found more common among the diabetes patients using oral hypoglycemic drugs 69(81.2%) as against those who had taken insulin was 15(57.7%) and combination of both oral drugs and insulin, in which 10(43.5%) of them used CAM.($p<0.5$)[Table 6]

DISCUSSION

Our study showed a high prevalence of use of CAM among diabetic individuals as 70%,which is similar to study conducted in new Delhi by Ankur Sethi et al , in which 89 % of the diabetic patients who were attending tertiary centre in New Delhi were found using indigenous medicines.[6] Our study is also similar to Gloria Y.Yeh et al,in which the prevalence of use of complementary and alternative medicine was 57% as seen in diabetic individuals. [7] While contrary to this, a study conducted by Leonard E.Egede et al ,found that among individuals with diabetes ,only 8% of them used complementary and alternative medicines. [8]

This study highlighted the pattern of use of CAM,as majority of the diabetic patients used Karela juice 57(60.6%) , Methi 40(42.6%) , Neem27(28.7%) , Homeopathic medicine 16 (17%) , Diabetic herb 12(12.8%) and Native powder or indigenous medicines 18(19.1%) .Most of the patients use more than one modality of treatment.This is similar to study conducted by Leonard E.Egede et al,where Nutrition advice, life style diet, spiritual healing, herbal remedies (20% of diabetic individuals) massage & meditation were used as a, modality of complementary and alternative medicine treatment . [8] . While,in a study conducted by Gloria Y.Yeh et al, therapies like solitary prayer or special practices (28%), herbal (7%) , commercial diet (6%), folk medicine (3%) were used by diabetic individuals. [7] The study is similar to Ankur Sethi et al,where majority of diabetic individuals used Karela juice.The choice of the use of CAM reflects,the belief that,bitter the medicine,it will reduce the blood sugar level. [6] Many studies are conducted of CAM use among persons with diabetes, in a wide range of CAM use, from use of herbs among 9% ,of low income Mexican American patients in Texas [9] , to use of traditional home remedies among 65% of immigrant Vietnamese patients in California. [10] Hunt et al , who surveyed Mexican Americans with type 2 diabetes and reported that although most of

the patients were aware of a variety of alternative treatments for diabetes, many of them use beneficial herbs.[9]

The persons responsible for motivating the diabetic patients to use CAM were fellow diabetics in 39(41.5%) patients, similar to study by Ibrahim A Oreagba et al,where 45.2% used herbal remedies influenced by friends,relatives and colleagues. [11] This is also similar to Ankur Sethi et al in which,diabetic individuals and relatives were the main source of motivation to use CAM. [6]

After 2 months of intake of indigenous medicines, the blood glucose level was monitored and recorded,majority 47.9% were not sure of any change.Similar to study conducted in New Delhi in which,majority 31.8% were not sure of any changes in glucose control. [6] A Canadian study examining patients with type 1 &2 Diabetes who were enrolled in diabetic education program showed that one third of individuals who were taking alternative medication they considered to be efficacious (eg vitamin supplements , herbal remedies). [12] Study done by Ryan et al , showed that a substandard proportion of patients with diabetes who used herbal remedies and supplements (such as glucosamine for arthritis or Echinacea for respiratory infections) but a few of them who used herbal treatments (fenugreek seeds or gymnema Sylvester commonly known as gurmar) have reported to be beneficial in individuals who have diabetes [13] .

Table 6,shows various socio-demographic factors influencing the intake of CAM among diabetic patients,our study showed ,as age increased, the use of CAM for diabetes also increased,probably due to fear of side effects due to aging, as well as the disease chronicity. This study is similar to Leonard E.Egede et al study,where old age (more than 60 years), were 2.4 times more likely to depend on Complementary & Alternative Medicines use. [8] Contrary to this, younger age diabetics were more likely to visit CAM practitioners,as study conducted by Chi-Wai Lui et al[14] and Jeongseon Kim et al. [15]

It was found in our study, that females were more commonly using CAM than males similar to Chi-Wai Lui et al, [14] although sex, race,type of diabetes, household income &co- morbidity were not single predilection of CAM use in diabetic people, [8] similar to our study.

The prevalence of use of CAM in relation to duration of diabetes was found that majority of the subjects 67(85.9%) had diabetes of less than 5 yrs duration and it showed a decrease in trend, with increase in duration of diabetes ,which is similar to study by Ankur Sethi et al,where maximum of patients with duration of illness less than 5 years have incidence of 90% use of CAM. [6] This probably suggests that diabetic patients are motivated by different sources to control the diabetes at early stages.

The prevalence of the use of CAM was more common among illiterate patients of 90.6% and it showed a decreasing trend with increase in level of education.This is contrary to study by Leonard E.Egede et al study,where higher educational status, were more likely to depend on Complementary & Alternative Medicines use. [8]

The prevalence of use of indigenous medicine according to the occupation of the patients was studied. This showed that 18 (40%)patients used indigenous medicine among skilled workers, 24(77.4%)patients among semi skilled and 52(89.7%) among unskilled. This is similar to study by Ibrahim A Oreagba et al ,where the use of CAM among unskilled workers was 74.8% and found to have significant difference.[11] Chi-Wai Lui et al in his study found that, unemployed were more likely to visit CAM practitioners. [14] This shows that, the occupation of people has an effect on the use of CAM.

CONCLUSION

Understanding patterns of use of complementary and alternative medicine among persons with diabetes, will not only help the health professionals , by providing more informed clinical care but also

help policymakers grade relevant frame work for future policy and guide investigators in the further development of CAM research. Differentiating efficacy of use of indigenous medicine with that of allopathic medicine remains as a challenge till today. Studies providing such information's would assist programme planners in the development of more accessible and effective services in preventing complications.

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ORIGINAL RESEARCH ARTICLE

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A Study on the Relationship of Music Therapy and the Personality Traits of Neuroticism and Agreeableness.

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ABSTRACT

BACKGROUND: Music has emotional, cognitive and social impacts on the listener. The magnitude of response is associated with the Big Five personality traits (Neuroticism, Extraversion, Openness to Experience, Agreeableness, and Conscientiousness). **AIM:** To determine the association between the Big Five personality traits and response to music therapy based on classical Indian ragas as evaluated by the improvements in self-rated anxiety and depression scores before and after music administration. **METHODS:** 28 engineering college students (15 males, 13 females) with signs of clinical anxiety and depression, evaluated by the Self- Rating Scale for Anxiety and depression (SAS and SDS) devised by Zung, were recruited for the study. The anxiety and depression scores before and after 21 days of music administration (music in Rag Bilaskhani Todi for 30 minutes twice a day through head phones) were compared. The personality traits of the students were assessed using the NEO-FFI of Costa & Mc Crae. Association between the personality traits and the difference in anxiety and depression scores before and after music administration was analyzed. **RESULTS:** The results indicate that response to music therapy is associated with the personality traits. A Significant positive correlation (r=0.3 for anxiety scores) is found to exist between those with high Neuroticism scale and improvement in the anxiety indices after Music therapy. A negative correlation exists between those with low Agreeableness scale and indices for anxiety and depression (r= -0.3 for anxiety scores, r= -0.2 for depression scores). **CONCLUSION:** Thus music alleviates stress and the response is associated with the inherent personality traits, namely Agreeableness and Neuroticism.

KEY WORDS: Music therapy, stress relief, personality traits

INTRODUCTION

Music is widely used for three different purposes viz *emotional use*, *cognitive or intellectual use* and *social use*[1]. Music's emotional affect, which is people's primary motivation for listening, may prepare them to act on prevailing conditions to attain a state of well-being[2]. For adolescents, the major gratification they get from music is the relief of tension[3].Music can evoke powerful emotional reactions in people, and listening to music affects the emotional and cognitive experience of an individual as well as physiological arousal[4]. Music is used as a coping mechanism in emotionally unstable individuals, in contrast to those scoring high on emotional stability[5,6].

According to certain authors, the three factors regarding the use of music (*emotional, cognitive and social*) are associated with the Big Five personality traits (Neuroticism, Extraversion, Openness to

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Experience, Agreeableness, and Conscientiousness)[7]. These authors have reported that positive correlations exist between Neuroticism and emotional use of music, and Openness to Experience and cognitive or intellectual use of music. A study conducted in Malaysia by Chamorro-Premuzic et al has found that individuals higher in Neuroticism are more likely to use music for emotional regulation[8]. The positive association between Neuroticism and reports of using music for emotional regulation is consistent with the idea that individuals higher in Neuroticism experience higher intensity of emotional affect, especially negative emotions[9].

The Big Five personality traits provide a comprehensive profile of an individual's behavioral tendencies, including their consistent affective and cognitive patterns, and though several studies have examined the relationship between personality factors and musical taste,[10,11] to date no references are available regarding the association between personality traits and response to music therapy. The present study was carried out to determine whether there are any definitive links between the different personality traits and response to music therapy using classical Indian ragas.

MATERIALS AND METHODS

28 adolescent students (15 males, 13 females) who recently joined a private engineering college near Pondicherry, with signs and symptoms of clinical anxiety and depression as evaluated by the Self-Rating Scale for Anxiety and depression (SAS and SDS) devised by Zung[12, 13] were chosen for the study. Written informed consent was obtained from all the participants. Ethical clearance was obtained from the institutional human ethical committee. The exclusion criteria included chronic physical ailments such as hypertension, obstructive pulmonary disease, diabetes, or history of drug abuse. The anxiety and depression scores before and after 21 days of music administration (music in Rag Bilaskhani Todi for 30 minutes twice a day, through head phones) were compared. The personality traits of the students were assessed using the NEO-FFI of Costa & Mc Crae[9]. Association between the personality traits and the difference in anxiety and depression scores before and after 21 days of music listening was calculated using Pearson's Correlation Coefficient. The results have been tabulated below:

RESULTS

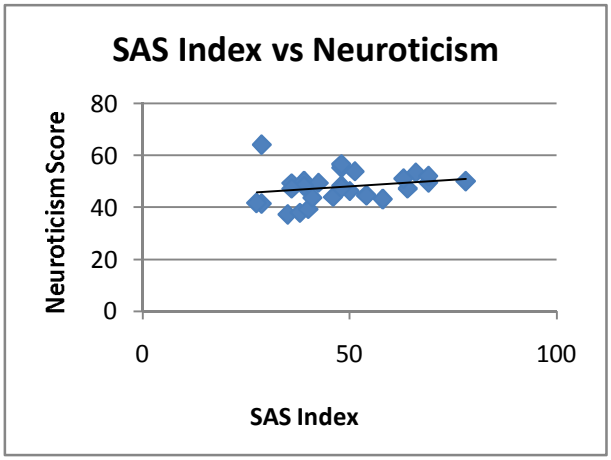
The anxiety and depression scores before and after music therapy were analyzed. The analysis of the relationship between response to music therapy and the personality traits shows the following results.

Table.1 Association between the personality traits and the difference in anxiety and depression scores

Correlation with SAS	Neuroticism	Extraversion	Openness to Experience	Agreeableness	Conscientiousness
Correlation with SAS r=	0.32*	0.02	0.2	-0.31*	0.15
Correlation with SDS r=	0.16	0.04	0.1	-0.3*	0.05

There is a significant improvement in Anxiety, Depression Scales after the course of music therapy which is evident from the **table.1** shown above. As far as personality traits are concerned, students with high neuroticism show significant reduction in SAS score after music therapy, implying that they respond well to the therapy.

Figure.1



Pearson's Correlation Coefficient shows a positive correlation is found to exist between those with high scores on the Neuroticism scale (r=0.3 for anxiety scores) (**Figure.1**) and improvement in the anxiety indices when assessed before and after Music therapy.

Whereas students with low agreeableness have an increasing trend in their anxiety (SAS) and depression (SDS) status, which shows they are less receptive to music therapy. Significant negative correlation exists between those with low scores on the Agreeableness scale and indices for anxiety (**Figure.2**) and depression (**Figure.3**) (r= -0.3 for anxiety scores; r= -0.2 for depression scores).

Figure 2

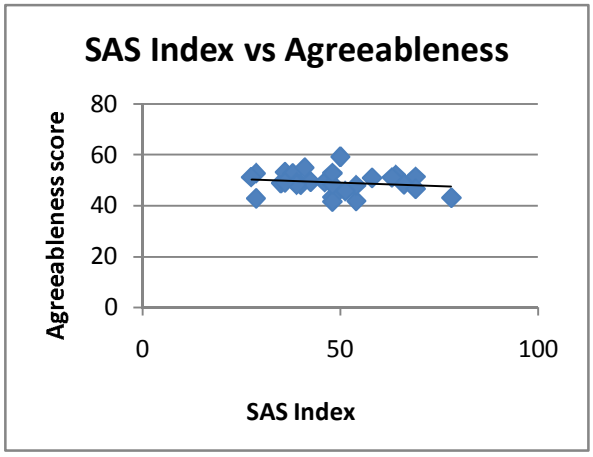
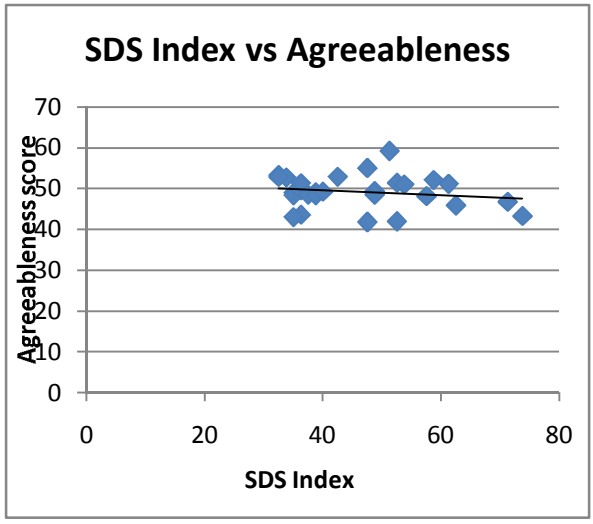


Figure 3



DISCUSSION

The results from our study indicate that response to music therapy is associated with the personality traits of Agreeableness and Neuroticism among students of the adolescent age group. Significant negative correlation exists between those with low scores on the Agreeableness scale and indices for anxiety and depression (r= -0.3 for anxiety scores; r= -0.2 for depression scores). Positive correlation is found to exist between those with high scores on the Neuroticism scale (r=0.3 for anxiety scores) and improvement in the anxiety indices when assessed before and after the music therapy sessions. The low correlations could be attributed to the small sample size, which, if increased may yield more significant associations. It is thus evident that participants with low Agreeableness and high Neuroticism scores demonstrate a good response to music therapy using classical ragas. While Neuroticism has been linked to brain mechanisms associated with avoidance, fearful temperaments, or negative emotionality, low Agreeableness is associated with lack of consideration for others and decreased empathy.[9,14] Both the above characteristics being linked to negative emotional states, the notion that music is used as a coping strategy is reinforced, as emotionally stable people are believed to be even tempered and not the type to let things get them; therefore they may not need music to cope with emotions. This could be the reason for the lack of good response to music therapy observed in participants with personality traits not related to negative emotionality. The increased receptivity for music therapy in those individuals with elevated Neuroticism and decreased Agreeableness may be connected with their emotional experience induced during music listening. Though autonomic and electrophysiological recordings have provided time-sensitive biological markers for emotion perception in music,[15,16] the degree to which biological markers predict the multidimensional psychological experience of musical emotion is unclear. Scherer[17] put forth the component process model of emotion which consists of the "emotion response triad" of physiological arousal, motor expression, and

subjective feelings. Further, a given song might elicit one emotion from participant A and a completely different sentiment from participant B,[16] and these variations have been correlated with potential personality differences.[18]

The above findings have been reinforced by recent studies which have suggested possible connections between Agreeableness and emotion[19]. In a study conducted by Tobin et al[20] both Neuroticism and Agreeableness emerged as significant predictors of emotional experience, when the participants' degree of emotional perception was assessed using standard psycho- physiological methods for examining responses to both positively and negatively charged emotional materials. Participants lower in Agreeableness rated the psycho-physiological measures as more pleasant than did participants higher in Agreeableness when positively charged emotional measures were used. They concluded that Agreeableness was related to nonverbal psycho-physiological measures of emotional responses. According to Rothbart and Bates[21], individual differences in Agreeableness may have their origins in temperament systems that control reactions to frustration.

CONCLUSION

We can hypothesize that a good response to music therapy using pleasant, soothing classical ragas infused with love and compassion, is associated with the inherent personality traits, namely Agreeableness and Neuroticism. The findings from the above study reinforce the fact that the brain is built to changes in response to mental training due the phenomenon of neural plasticity, and therefore it is possible to train a mind to be happy in those individuals endowed with personality traits linked to negative emotional states. More studies involving the association between the personality traits which are genetically determined and receptivity to music therapy are needed to validate these findings.

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ORIGINAL RESEARCH ARTICLE

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Prevalence of Chronic Morbidities And Risk Behaviours Of The Coastal Population of Kerala.

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ABSTRACT:

Back ground : Chronic morbidities are increasing in Kerala. Knowledge of chronic morbidity pattern of marginal coastal population is essential for planners in the health sector of India. **Aim:** To determine the prevalence of chronic morbidity pattern and behavioral risk factors of the coastal area of Kerala and to assess the factors responsible for it. **Settings and Design:** Community based Cross sectional survey **Methods and Material:** A cross sectional survey of 2531 coastal population of aged 20 years or above was conducted. Statistical analysis was done using SPSS version12. Percentages and mean were calculated. P value less than 0.05 were considered as significant. **Results:** The overall prevalence of chronic morbidities detected were 18.7% (15.4% male and 22.2% female) Major chronic morbidities detected among fisher folks in the descending order were hypertension diabetes, cancer, psychiatric illness, asthma and arthritis. High prevalence of behavioral risk factors was also noted. Age and female sex were found to be positively associated with chronic morbidities ($p<0.05$)**Conclusions:** High prevalence of chronic morbidities including women morbidity and behavioural risk factors suggests the need for urgent public health planning focusing on lifestyle behavior and early case detection

Key-words: Chronic morbidities, coastal area, socio economic scale, prevalence, behavioral risk factors

Introduction:

Chronic diseases mainly non communicable diseases(NCD) are becoming major causes of morbidity and mortality in most of the developing countries including India [(1)]. In India NCD were responsible for 53% of deaths and 44% of disability adjusted life years lost [(1)]. Kerala a state of India where most of the health Indicators are close to the western countries is also facing the same epidemic change of communicable to non communicable diseases like developing countries [(2--7).] Studies from both urban and rural part of Kerala had reported same trends in the rise of chronic diseases. [(2-7).]

Kerala a state of India is enriched with its coastal area. The coastline of Kerala runs to a length of about 590km with a popualtion of 11.36 lakhs. The health and socio economic standared of the fisher folks who are the inhabitants of the coastal area were very low compared to kerala health standared . Fishing being a seasonal activity, they have to look for subsidiary jobs, which are not always forthcoming. Even though a number of studies related to chronic diseases has been reported in the urban and rural area of Kerala [(2-7)] as per best of our knowledge the chronic disease pattern of Kerala coastal area has not been studied yet. Previous studies from kerala has reported behavioral risk factors like smoking, alcoholism [(8)] and pan chewing and their relationship with non communicable diseases but all these studies included only rural and urban areas. We need to understand the risk

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behaviours of this vulnerable population to decide the type of future health programmes to be implemented in this area. We undertook this study to estimate the prevalence of chronic diseases, their behavioral risk factors and also to identify the socio demographic profile of the coastal population .

Subjects and Methods:

The study was conducted during 2011 January to April. one of the coastal Panchayath of Thiruvananthapuram namely Kadinamkulam was randomly selected for the study . The estimated sample size was a minimum of 2400 by using the formula n=4pq / d2 where d is the relative precession of 20% and p is taken as average prevalence as 4% . Expecting a non response rate of 10% total sample calculated was 2640.

Inclusion and exclusion criteria

All the permanent residents both male and female of age 20 years above were included in the survey. Individuals below 20years and migrants from other areas were excluded.

The purpose of the study was explained to all the participants and informed consent were obtained before starting the study. The demographic, social economic profile and the risky habits of the participants were interviewed using a structured questionare. Socio economic scale of the study population was calculated using Kuppuswami scale [(11)]. No physical or biomedical examinations were conducted to diagnose underlying diseases due to the financial constraints. The existing morbidities were recorded through personal interviews. The purpose of the data collection was explained to the participant and informed consent was obtained from each participant.

Statistical analysis

The data were analysed using SPSS version 12. Prevalence of morbidities and behavioral risk factors were calculated as percentages. Chi-square was used to detect the factors associated with chronic morbidities. P value less than 0.05 were considered as significant.

Results:

Table1; Socio demographic profile of the study population

Baseline Parameter	Male No (%)	Female No (%)	Total No (%)
Age group			
20-29	420 (32.1)	444 (36.3)	864(34.1)
30-39	360 (27.5)	300 (24.5)	660(26.1)
40-49	237 (18.1)	222 (18.2)	459(18.1)
50-59	152 (11.6)	142 (11.6)	294(11.6)
60and above	139 (10.7)	115 (9.4)	254(10.1)
Total	1308(100)	1223(100)	2531 (100)
Literacy			
Illiterate	271(20.7)	281 (23)	552(21.8)
Primary	552(42.2)	494 (40.4)	046(41.3)
High school	407(31.1)	367 (30)	774(30.6)
10th and above	78(6)	81 (6.6)	159(6.3)
Total	1308 (100	1223(100)	2531 (100)
Occupation			
Fishing / fishselling	922 (70.5)	125(10.2)	1047(41.4)
Other	200 (15.3)	105 (8.6)	305(12.1)
Nil	82(14.2)	993 (81.2)	1179(46.5)
Total	1308 (100	1223(100)	2531(100)
Income			
Nil	462 (35.3)	1059 (86.6)	1521 (60.1)
<500	673 (51.5)	136 (11.1)	809 (31.9)
500-1000	80 (6.1)	12 (1)	92 (3.6)
Above 1000	93 (7.1)	16 (1.3)	109 (4.4)
Total	1308(100)	1223 (100)	2531 (100)
Socioeconomic scale			
Lower	463(35.4)	565 (46.2)	1028(40.5)
Upper lower	752 (57.5)	600(49.1)	1353 (53.6)
Lower Middle	84 (6.4)	53(4.3)	136(5.4)
Upper Middle	9(0.7)	5(0.4)	14(0.5)
Upper	0	0	0
Total	1308 (100	1223 (100)	2531 (100)

Total participants for the survey was 2531, 1308 male (51.7%) and 1223 female (48.3%) with a response rate of 96%. The mean age of the study population was 38.3 with a standard deviation of 14.2. Baseline socio demographic features of the study population were shown in the table1. 21.8% of the study population was illiterate and 92% is having monthly income lower than INR 500. 94.1 5% of the study population belonged to the low Socio

economic status. The morbidity pattern of the fisher folks based on age and sex were shown in table2.

Table 2: Age& sex wise prevalence of chronic morbidities in the costal population of Kerala

Age group &sex	Chronic diseases (%)							
	DM	HT	Arthritis	Asthma	Psych. illnes	Canc\er	Tota	P value
20-29								
Male	0.2	1.2	1.4	0.2	1	0.2	5.5	
Female	0.7	1.1	0.2	1.4	0.9	0.2	5.4	0.54
Total	0.5	1.2	0.8	0.8	0.9	0.2	5.4	
30-39								
Male	2.2	1.9	2.2	1.1	0.8	0	9.4	
Female	2.3	8	3.3	0.7	0.7	0.3	13.	0.001*
Total	2.3	4.7	2.7	0.9	0.8	0.2	318	
40-49								
Male	3.8	5.1	3.4	2.1	1.7	0.4	17.3	
Female	6.8	14.9	5.4	5.9	0.9	0.5	34.7	0.00*
Total	5.2	9.8	4.4	3.9	1.3	0.4	25.7	
50-59								
Male	11.8	12.5	4.6	2.6	1.3	1.3	29.6	0.08
Female	12.7	23.2	3.5	3.5	1.4	0	38	
Total	12.2	17.7	4.1	3.1	1.4	0.7	33.7	
60 &above								
Male	15.1	21.6	2.9	2.9	2.9	2.9	42.4	
Female	19.1	32.2	1.7	8.7	2.6	0	54.8	0.03*
Total	16.9	26.4	2.4	5.5	2.8	1.6	48	
Male	4.4	5.6	2.5	1.4	1.3	0.6	15.4	
Female	5.3	10.8	2.5	2.9	1.1	0.2	22.2	
Total	4.8	8.1	2.5	2.1	1.2	0.4	18.7	0.00*

18.7% of the total population (15.4% in male and 22.4% in female) was suffering from one or other type of chronic diseases. Age specific analysis had shown that 48% of the geriatric population was suffering from any one of the chronic morbidity. Among the morbidities detected hyper tension has got first rank both in males and females

The prevalence of chronic morbidities was analyzed across the factors like sociodemographic and behavioral risk factors. Factors like age and female sex were found to be significantly associated with morbidities but no positive association has been noticed with behavioural risk factors. The prevalence of behavioral risk factors like alcoholism smoking and panmasala were shown in the table3. The mean age of starting any one of the habit was 17.4 (sd 9.1)

Table3: Prevalence (%) of behavioral risk factors among the male participants

Age group	Alcoholism	Smoking	Panmasala
20-29	8.1	6.2	6.7
30-39	29.2	18.9	25
40-49	44.3	32.5	35.4
50-59	53.3	38.2	44.1
60&above	40.3	30.2	30.9
Total	29.1	20.7	23.9

Discussion:

This study has shown that 18.7 % of the coastal population above age 20 year was suffering from one or more than one type of chronic diseases. The most common morbidity detected by the present study was hypertension. Review of literature has shown that no previous studies have been done to detect chronic disease pattern of the coastal population. The reported studies from urban and rural areas of Thiruvananthapuram had shown that diabetes and hypertension and cardiovascular diseases are increasing [2-6] .The prevalence detected from the present study is much lower than these studies. Prevalence detected by the present study was based on existing diseases and no attempt has been made to identify undiagnosed cases through physical and biochemical investigation. So this may be an underestimation of real burden of diseases.

In this study age and sex have shown significant association with the prevalence of chronic morbidities and this is comparable to the finding of Thankappan et al [4] and highest prevalence was noticed in the age group of above sixty .This study did not reveal any statistical significance of chronic diseases in relation to behavioral risk factors as identified by the previous studies [2-6]

The present study results have shown high burden of chronic diseases among coastal women. According to a study conducted by Thankappan et al [4] prevalence of hypertension was high for males compared to females but the present study reports has shown that both hypertension and diabetes were

high among females, but cancer and psychiatric illness were lower in women compared to men.

The study has noticed high prevalence of behavioral risk factors and their early onset. The prevalence of smoking among men in the present study was 20.7% and almost same prevalence was reported by a study conducted in rural area in early nineties[9] but this was lower than State survey (40%) [8]. 8.1% of the people in the age between 20-29 were addicted to alcohol and more than 6% of the same group is using panmasala and smoking showed the urgent need of life style modification.

The socio demographic profile analysis of coastal area had shown that life slandered of coastal population is low compared to the average Kerala life standard [4]. Low SES mixed with high behavioural riskfactors may again deteriorate the health and social standard of poor fisher folks

The result of the study has shown that coastal population is suffering from high load of chronic diseases especially in advanced ages and early onset of behavioral risk factors. Life style modification for risk reduction and screening programmes for early case detection are likely to make a substantial impact on mitigating the morbidities and mortalities due to chronic diseases in the coastal area. Apart from that we need to do large scale studies to understand health status of coastal women

No attempt has been made by the present study to detect the underlying un diagnosed cases due to financial constraints. Even though this is a major limitation, the study results will be an initiative for future studies in the coastal area and we need to plan effective programmes to improve health status of poor fishermen population

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Assessment of Immunization Status among the Children Age Group between 12-23 Months by 15 Cluster Sampling Technique in Rural Area of Tamilnadu.

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ABSTRACT

Back ground: Vaccination greatly reduces the morbidity, disability and mortality. Independent experts and WHO have shown that vaccines are far safer than therapeutic medicines. Approximately 46% of all deaths in low-income countries are due to communicable diseases. Immunization against vaccine-preventable diseases is essential to reach Millennium Development Goal 4 reducing under-five mortality by two thirds by 2015. **Objectives:** This study was carried out to assess the immunization status of children in the age group12-23 months and to know the reasons for non-immunization of children. **Methods**: A Community based cross-sectional study was conducted. We included 270 children between 12-23 months of age by stratified cluster sampling design,15 clusters were selected in the rural area of Trichy district, Tamilnadu. Mothers of the children were interviewed using a predesigned schedule.

Result and Conclusion: A total of 137(50.8%) boys & 133(49.2%) girls were covered under the survey. Majority 195(72.2%) of the respondents have immunization card out of 270. The coverage was highest for BCG and lowest for measles. BCG scar was seen in 252 (93.3%) children out of 270 who have history of BCG vaccination 270 (100.0%). A total of 257 (95.1%) were fully immunized and 12(4.16%) were partially immunized, none without immunization and only one with unknown status. There is a need for capacity building exercise amongst health care professionals involved in immunization services.

Key Words: Immunization Status, Children between 12-23months, Trichy, Tamilnadu.

Introduction

Approximately, 46% of all deaths in low-income countries are due to communicable diseases.[1] WHO recommends that all children should be vaccinated, the use of vaccines to make person immune or resistant to particular infectious diseases.

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Independent experts and WHO have shown that vaccines are far safer than therapeutic medicines. Vaccine is one of the world's most powerful tools for health, highly cost-effective and relatively inexpensive health intervention. Immunization to protect children and adults from infectious diseases, it is one of the greatest public health achievement. Immunization against vaccine-preventable diseases is essential to reach Millennium Development Goal 4, reducing under-five mortality by two thirds by 2015.[2] Immunization coverage levels and trends are used to track, evaluate and share the information, helps as a tool to understand the level of immunization coverage. Statistics on levels and trends are used to monitor the performance of services at local, national and international levels.[3]

It will help to identify areas of weak system performance and reveal areas where focused attention and extra resources may be required.[4] Although national coverage levels can "mask" sub-national geographical or sociological pockets where coverage is much lower, in 2006, 57% of children lived in countries with greater than 80% DTP3 coverage. Global coverage levels remained fairly constant and began rising slowly but steadily in 2000, until DTP3 coverage worldwide had reached 81% in 2006.[3] Household surveys are the most common survey sources of immunization coverage data.

Methodology

A community based cross sectional study was conducted in the rural area of Trichy district of Tamilnadu a South Indian State during the May 2012 to Aug 2012. A list of all villages under the Lalgudi taluk (89) with a population of 53,946 was procured. A cluster interval (3596) was obtained by dividing the total population by 15 (number of clusters). A random number less than the cluster interval (3596) were generated with the help of a currency note. The cluster, which represented this number, was picked up as the first cluster and subsequent clusters were selected by adding the cluster interval of 3596. Thus, a total of 15 clusters were selected on the basis of systematic random sampling from the probability of the cluster selection based on the population size of the cluster. In each cluster, households were studied in a sequence until a total of 18 children in the age group of 12 -23 months were covered. Finally a total of 270 children were studied. For calculation of coverage, vaccines provided under the Universal Immunization Program (BCG, OPV, DPT, Hepatitis B and Measles) were considered. Immunization history gathered either by looking at immunization records at home, asking child's caretaker (recall) or both. Data were analyzed by using the EPI-INFO Version 7 package and MS Excel 2007 for simple proportions was calculated and statistical tests of significance were applied wherever necessary.

Results:

A total of 918 families with 3763 subjects with an average family size of 4.1 were studied from 15 clusters. A total of 137(50.8%) boys & 133(49.2%) girls were covered under the survey. Majority of the study subjects were delivered in government hospitals 171 (63.3%) among this Backward Caste (BC) 115 (67.4%), Open Category (OC) 7(4.0%) and Scheduled Castes (SC) 49 (28.6%). Remaining in the private hospitals 99 (36.7%), BC 85 (85.9%), OC 4 (4.0%) and SC 10 (10.1%). Most of them given birth by normal vaginal delivery 209 (77.4%) and remaining 61 (22.5%) was given birth by either emergency or elective caesarean. Most of the children 243 (90.0%) were born with normal birth weight (2500g to 3500g), 22 (8.1%) were Low birth weight children (<2499g) and the remaining were more than normal weight (>3500g) 5 (1.9%). Most of times low birth weight babies were missing the immunization 2 (9%) followed by normal birth weight babies 11 (4.5%).

Table 1 Mother's educational status vs child's immunization status

Education status of Mother	Fully Immunized No (%)	Partially Immunized No (%)	Total No (%)
Illiterate	14(5)	0(0)	14(5)
Primary	27 (11)	1(8)	28(10)
Secondary	46 (18)	4(33)	50(19)
Higher secondary	134 (52)	7(58)	141(52)
Degree	30 (12)	0(0)	30(11)
Postgraduate	6 (2)	0(0)	6(2)
TOTAL	257 (100)	12(100)	269(100)

Among 270 respondents, 195 (72.2%) have immunization cards. and rest of cases details obtained by recall history and in 1 case immunization status was not known. The presence of BCG scar was considered for obtaining details of vaccination. The coverage was highest for BCG and lowest for measles. BCG scar was seen in 252 (93.3%) children out of those who have history of BCG vaccination 270 (100.0%). Coverage for primary and secondary doses of OPV, DPT and Hep B (Hepatitis B) was almost similar 269 (99.6%).

A total of 257 (95.1%) were fully immunized and 12(4.16%) were partially immunized, none was without immunization and only one with unknown status. The dropout rate was highest for BCG-Measles (>4.9%) while for dropout BCG-DPT3 rate was less than 3%.

Table 2 Demographic distribution of the Study sample

Category	Immunization status					
	Boys		Girls		Total	
	Full No (%)	Partial No (%)	Full No (%)	Partial No (%)	Full No (%)	Partial No (%)
OC	5 (3.8)	1 (16.6)	4 (3.1)	1 (16.6)	9 (3.5)	2 (16.6)
BC	96 (73.2)	4 (66.6)	97 (76.9)	2 (33.3)	193 (75.1)	6 (50.0)
SC	30 (22.9)	1 (16.6)	25 (19.8)	3 (50.0)	55 (21.4)	4 (33.3)
Total	131 (100)	6 (100)	126 (100)	6 (100)	257 (100)	12 (100)

In one case status was unknown

OC - Open Category, BC - Backward Castes, SC - Scheduled Castes

Table 3: Gender wise vaccination coverage and dropout rates among study subjects

Vaccination coverage	Boys (n=137)	Girls (n=133)	Total (n=270)
	No %	No %	No %
BCG	137(100)	133(100)	270(100)
DPT1	137(100)	132(99.25)	269(99.63)
DPT2	137100)	132(99.25)	269(99.63)
DPT3	136(99.27)	130(97.74)	266(98.52)
OPV1	137(100)	132(99.25)	269(99.63)
OPV2	137(100)	132(99.25)	269(99.63)
OPV3	136(99.27)	130(97.74)	266(98.52)
HEP B 1	137(100)	132(99.25)	269(99.63)
HEP B 2	137(100)	132(99.25)	269(99.63)
HEP B 3	136(99.27)	130(97.74)	266(98.52)
MEASLES	131(95.62)	126(94.74)	257(95.19)
OTHERS(JE)	27(19.71)	22(16.54)	49(18.15)
DROPOUT RATES			
BCG to DPT3	0.72	2.25	1.48
DPT1 to DPT3	0.72	1.5	1.11
OPV 1 to OPV3	0.72	1.5	1.11
Hep B1 to HepB3	0.72	1.5	1.11
BCG TO Measles	4.37	5.26	4.81

Amongst the various reasons for missing measles immunization to child, the most common was unawareness for the need of vaccination, and rural areas lack of availability of services not available at village level (Centre approached) was reported to be the major cause for not immunizing the child.

Gender wise comparison of the vaccine coverage [Table 2] shows that the proportion of fully immunized children was higher in males(96.0%) than in females(95.0%), however the difference was statistically not significant (x^2= 0.004, P > 0.5). Coverage of BCG for both male and female was 100%, and for DPT1, DPT2, OPV1 , OPV2 and Hep B1, Hep B2 was slightly higher in males (100%). In females the coverage was 98.4%. The coverage of DPT3, OPV3, Hep B3 in females (96.9%) and in males (99.2%). Whereas coverage of measles compared to DPT3 more in males than female 131(95.6%) and 126 (94.4%) respectively. All the calculated dropout rates were higher among females than in males. However the differences were statistically not significant (x^2= 0.11, P > 0.5).

Discussion

The present survey was carried out to know the vaccination coverage among the age group between 12-23 months.

According to NHFS-3, that immunization card was available with 76.1% children at National Level. In this study we found that 72.2% of children only have the immunization cards, which is slight lesser than the national average. According to NHFS-3, 80.9% children were fully immunized in the state of Tamil Nadu which is above National average.[5]

Approximately three fourth of male (131 , 95.6%) and female (126, 94.4%) children were found to be fully immunized, it was slightly better amongst male 95.6% than that of female 94.4%. However this difference was not statistically significant (p>0.5). NHFS-3 observed that BCG coverage was 99.5%, measles 92.5%, coverage of DPT 1, 2, 3 & OPV 1, 2, 3 were 98.9%, 97.7%, 95.7% & 99.6%, 96.3%,

87.8% respectively for Tamil Nadu, [5] our study found similar results as NFHS 3 data. The main reasons for non immunization or dropout were similar to earlier studies. [6,7]

Health workers are too busy throughout the year in several rounds of pulse polio immunization little time left for routine vaccination. It affected all vaccines except BCG, which is given at the time of birth or during the first contact with health functionaries. Single dose administrations such as BCG requires little parent's motivation.

The MICS 1998 conducted in 15 clusters served as a baseline for Surat, 300 children (12 - 23 months old) were assessed for immunization coverage and the coverage rates were 75%, 76.3%, and 51.3% for BCG, DPT ^{3}, and OPV ^{3}, respectively - lesser than the present study. [8] In our study, most of those who received a measles vaccine (257 out of 270) also received a first dose of vitamin A. Therefore, any attempt to improve measles vaccinations will also improve the coverage of Vitamin A.

Higher proportion of most vaccine coverage shows result of governmental efforts to improve vaccine coverage. Accessibility is significant determinant for good coverage.[9] Considering history by parents, all vaccines show coverage over 90%, this shows that the "Access" is good. Most dropout rates are below 5% suggesting that the "Utilization" is also good. The dropout rate is minimum for DPT1-DPT3, increases further for BCG-DPT3 & highest for BCG-Measles, indicating that the dropout rate increases with time duration between doses or increase in the number of vaccines.

Conclusions and Recommendations

The present study concludes that there is very good level of immunization coverage. It also shows a level of immunization coverage for children which is above the National average. There is a need for capacity building exercise amongst health care professionals involved in immunization services. There is also need for a bigger study comprising districts from all parts of Tamil Nadu to make a more definitive conclusion. A sustained and focused IEC campaign to improve the awareness amongst community will help in improving community participation leading to a better coverage.

To improve immunization coverage and to sustained the above 85% of coverage at national level some of the steps has to be taken up by the policy makers

1. Introduction of Combined (Bivalent, Trivalent, Tetravalent, Pentavalent and hexavalent) vaccines in the UIP so that number of pricks can be minimized and acceptability will be increased.

2. Link up with other beneficiary schemes like Dr. Muthulakshmi Reddy Maternity Benefit Scheme in Tamilnadu and Janani Suraksha Yojana in some other states. In Dr. Muthulakshmi Reddy Maternity Benefit Scheme the 3rd Installment of cash benefit will be released after completion of third dose of DPT, Hepatitis - B and Polio / Pentavalent vaccine for the child as per the time schedule.

3. Public and Private Child health professionals should maintain common immunization card so that duplication will be minimized. All schools have to change admission rules and submission of Immunization details report and birth certificates should be made mandatory.

4. All schools must maintain the health records of all students compulsorily and it has to be carried forward if student transferred to other schools.

5. Provider reminder/recall interventions should inform those individual clients are due (reminder) or overdue (recall) for specific vaccinations

6. All the health institutions has to maintain Roomer register and adverse events following immunization register, so that we can educate the public regarding that particular roomer or adverse events.

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Prevalence of Use of Tobacco Among Males Aged 15 Years And Above In Nellore city, Andhra Pradesh

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ABSTRACT

Introduction : Tobacco use is one of the leading causes of preventable deaths. Its consumption is responsible for half of the cancers in men and a quarter of all cancers in women in India in addition being a risk factor for cardiovascular disease and chronic obstructive pulmonary diseases. A high prevalence of tobacco use among the population was noted in Southern states especially in Andhra Pradesh. **Objectives :** To study the prevalence of tobacco use among males aged 15 years and above in Nellore city and also the factors associated with tobacco consumption. **Materials and Methods :** Descriptive, cross-sectional study of the sample population of 500 study subjects, males aged 15 years and above were selected by Simple Random Sampling . The data was collected by interviewing the study subjects using a predesigned , pretested structured questionnaire. All the data was analyzed by using SPSS version 17.0 for windows. **Results :** The prevalence of ever users of tobacco was 55.4% and that of the current users was 34%. Most commonly used tobacco product among current users was cigarette (59.4%).Tobacco use was mostly due to pleasure followed by its use to get relief from tension. Main reasons for cessation of tobacco was self motivation followed by medical advise. Most of the current users(51.8%) of tobacco were aware of adverse effects of tobacco. **Conclusion :** The study shows a high prevalence of tobacco consumption in males aged 15 years and above in Nellore City. Public Health programmes targeted at youth in generating awareness about the hazards incumbent to tobacco consumption and banning sale and use of tobacco products in and around public places especially educational institutions will in the long run curb the menace of tobacco use.

Key words : Tobacco , ever users, current users, prevalence.

Introduction

Today it is known that tobacco use continues to be the leading global cause of preventable death. It kills nearly 6 million people and causes hundreds of billions of dollars of economic damage worldwide each year. Most of these deaths occur in Low and Middle-income countries, and this disparity is expected to widen further over the next several decades. If current trends continue, by 2030 tobacco will kill more than 8 million people worldwide each year, with 80% of these premature deaths among people living in Low and Middle-income countries. Over the course of the 21st century, tobacco use could kill a billion people or more unless urgent action is taken.[1]

Tobacco is in legal use everywhere in the world, yet it causes far more deaths than all other psychoactive substances combined. Tobacco is responsible for about 30% of all cancer deaths in

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developed countries.[2] More people die from tobacco related diseases other than cancer such as stroke, myocardial infarction, aortic aneurysms and peptic ulcer.

In India, tobacco consumption is responsible for half of all the cancers in men and a quarter of all cancers in women, in addition to being a risk factor for cardiovascular diseases and chronic obstructive pulmonary diseases. The World Health Organization predicts that tobacco deaths in India may exceed 1.5 million annually by 2020. [3] In India, nationwide surveys revealed that prevalence of tobacco use in males is 23.2% - 69.3% and in females prevalence ranges from 4% - 50% . [4] In South India the prevalence of smoking among both males (35.4%) and females (4.2%) is high in Andhra Pradesh .[5]

However, considerable research is required to comprehend the actual trends of tobacco consumption. National and state wise representative and reliable prevalence data on tobacco consumption are scarce and also the socio-demographic predictors of tobacco smoking and chewing are poorly understood.

Taking the above mentioned facts into consideration, this present study was undertaken with the following objectives in mind:

1) To find out the prevalence of tobacco consumption among males aged 15 years and above in Nellore city.

2) To find out the factors associated with tobacco consumption among current users.

Materials and methods

The present cross-sectional community based study was carried out in Nellore city in Sri Potti Sri Ramulu Nellore District, the southernmost coastal district of Andhra Pradesh. According to a previous study,[3] the tobacco consumption prevalence in men aged 15 years and above in India was 47%. Sample size was estimated at 5% level of significance with an allowable error of 10%. Now, using the formula

$$n = Z^2 P Q / E^2 = (1.96)^2 \times 47 \times 53 / 4.7^2 = 433$$

which has been rounded off to 500 males aged 15 and above. Institutional ethical committee of Narayana Medical College, Nellore, accorded ethical clearance for this study. Pilot study was conducted from 5th September to 10th September 2010 in Rural Health Centre, Venkatachalam, Nellore. This study was conducted from January to July 2011 by using Simple Random Sampling method. Nellore city is divided into 50 wards by the municipal corporation. All the wards were included in the present study. After reaching each ward, all the lanes were numbered and out of them one lane was selected randomly using currency note method. Within the selected lane all the houses were numbered. The first household was selected randomly using the currency note method. From that house subsequent houses were visited following right hand rule. Males aged 15 and above were included in the study. The same procedure was followed till the desired sample of 10 in each ward was achieved. The total male population studied in all the wards together were 500. Only those respondents who were residing in the area for the last 6 months or more were included in the study. If there was more than one male subject in the same house, then the older of the two was included in the study. Data was collected by interview method using pre-designed, pre-tested structured questionnaire. All the study subjects were explained in detail about the purpose and methodology of the study and were fully assured of strict confidentiality. Informed oral consent was obtained.

Inclusion criteria:

Males aged 15 years and above residing in Nellore city

Exclusion criteria:

1. Informants who did not give consent to participate in the present study.
2. Visitors and locked houses

Collected data was analyzed with SPSS (version 17.0) for windows. Descriptive data are presented as frequency. Univariate analysis using χ^2 test was done

to determine significant differences and associations of various parameters with tobacco usage status.

Results

Out of the total 500 study population , majority 178 (43.8%) of the subjects were in the age group of 15-39 yrs. (**Table-1**).

Table 1 : Age distribution of the study subjects (n=500)

Age group (years)	Number	Percentage
15-39	219	43.8
40-59	178	35.6
≥ 60	103	20.6
Total	500	100

43.6% of the study subjects were of backward castes.73.2 % of the study subjects were married and 72% belonged to nuclear families . Majority 298 (59.6%) of the study population belonged to middle class as per BG Prasad classification. 85% of the study group were literates. 153 (30.6 %) of the study subjects were unemployed followed by clerical/ shop/farmer 116 (23.2%). Professionals constituted only 4%.It was seen that 277 (55.4%) of the study population were ever users of tobacco ie persons having used tobacco even once in their lifetime. 87 % of the ever users started tobacco consumption in between age gap of 15-39 yrs. Out of the 277 ever users 61.37 % were observed to be current users of tobacco ie person having used tobacco at least once in the last 30 days preceding the survey. The prevalence of ever users of tobacco consumption was found to be 55.4% in the study population and the prevalence of current users of tobacco consumption in the same was found to be 34%. (**Table-2**).

Table 2: Ever users and Current users of tobacco consumption in the study population (n=500)

Total study population	Ever users of tobacco	%	Current users of tobacco	%
500	277	55.4	170	34

Most commonly used tobacco product among current users was cigarette (59.4%), followed by beedi (18.2%), ghutka/pan (15%), chutta (6%) , cigarette and ghutka/paan (1%).It was noted that 142 (83.5%) of the current users were consuming tobacco in smoking form. Majority 68(47.8%) of the current smokers smoke about 1-5 cigarettes/ beedis / chuttas per day and majority 21(80.8%) of current users

Table 3 : Factors associated with Tobacco consumption among current users (n=277)

Variables	Current consumption Yes(%)	No(%)	p value
Age (years)			
15-39	61(35.9)	30(28)	< 0.05
40-59	72(42.4)	34(31.8)	
≥ 60	37(21.8)	43(40.2)	
Religion			
Hindu	117(68.8)	71(66.4)	>0.05
Muslim	43(25.3)	25(23.4)	
Christian	09(5.3)	10(9.3)	
Others	01(0.6)	01(0.9)	
Caste			
BC	83(48.8)	44(41.1)	< 0.05
OC	67(39.4)	40(37.4)	
SC	17(10)	14(13.1)	
ST	03(1.8)	09(8.4)	
Marital Status			
Unmarried	19(11.2)	15(14.0)	> 0.05
Married	145(85.3)	81(75.7)	
Widowed	06(3.5)	10(9.3)	
Separated	0(0)	01(0.9)	
Living with family			
Yes	166(97.6)	102(95.3)	> 0.05
No	04(2.4)	05(4.7)	
Social Class			
Upper High	10(5.9)	18(16.8)	> 0.05
High	24(14.1)	15(14.0)	
Upper Middle	56(32.9)	33(30.8)	
Lower Middle	59(34.7)	30(28.0)	
Poor	18(10.6)	11(10.3)	
BPL	03(1.8)	0(0)	
Education Status			
Illiterate	41(24.1)	17(15.9)	< 0.05
Primary	15(8.8)	04(3.7)	
Mid School	32(18.8)	09(8.4)	
High School	46(27.1)	30(28)	
Intermediate/ Post high school	14(8.2)	12(11.2)	
Graduate/PG	20(11.8)	27(25.2)	
Professional/ Honours	02(1.2)	08(7.5)	
Occupation			
Professional	02(1.2)	03(2.6)	< 0.05
Semi-professional	06(3.5)	05(4.7)	
Clerical/shop owner/farme	40(23.5)	12(11.2)	
Skilled worker	21(12.4)	12(11.2)	
Semi skilled worker	15(8.8)	04(3.7)	
Un-skilled worker	53(31.2)	18(16.8)	
Unemployed	33(19.4)	53(49.5)	

consume 1-5 packs of ghutka/pan per day. 88.2% of the current users were found to consume tobacco for the duration of 5yrs and above. Highest proportion of current tobacco consumers was seen in the age group of 40-59 yrs and the difference among the various age groups was found to be statistically significant ($p<0.05$).Majority(48.8%) of the current consumers belonged to backward caste and the difference among the various castes was found to be statistically significant ($p<0.05$). Among the current consumers the post high school group constituted 21.2% and the difference among the different educational groups was statistically significant ($p<0.05$).Most of the current consumers were unskilled workers (31.2%) and the difference among the occupational groups was statistically significant($p<0.05$). The association of tobacco consumption among current users with religion, marital status, living with family, social class was however found to be statistically insignificant ($p>0.05$). (**Table-3**). It was observed that majority 67(39.4%) of the current users were consuming tobacco for pleasure followed by 56(32.9%) of them to get relief from tensions. (**Table-4**)

Table 4 : Reasons for consuming tobacco among current users (n=170)

Reason	Number	Percentage
For style	04	2.4
Pleasure	67	39.4
Curiosity	01	0.6
Personal problems	01	0.6
Family problems	02	1.2
Loneliness	01	0.6
Relief from tensions	56	32.9
Others	38	22.4
Total	170	100

.Peers were the main persons 114 (67.1%) to initiate tobacco use among current users. (**Table-5**) The main reasons for cessation of tobacco consumption among ever users was self motivation 62(57.9%) followed by medical advice. (**Table-6**). 61.2% of the study population and 51.8% of current users were aware of adverse effects of tobacco consumption. (**Table-7**).

Table 5: Sources for initiation of tobacco in current users (n=170)

Initiation of Tobacco	Number	(%)
Peers	114	67.1
Relatives	04	2.4
Self	40	23.5
Social group	12	7.1
Total	170	100

Table 6: Reasons for cessation among ever users (n=107)

Reasons	Number	%
Self motivation	62	57.9
Legal measures	01	0.9
Peer pressure	01	0.9
Medical advice	33	30.8
Family pressure	10	9.3
Total	107	100

Table 7: Awareness regarding adverse effects of tobacco consumption (n=500)

Awareness	Study population (%)	Current users (%)
Yes	306 (61.2)	88 (51.8)
No	194 (38.8)	82 (48.2)
Total	500 (100)	170 (100)

Discussion

Out of 500 study subjects, 277 (55.4%) were ever users of tobacco. Among 277 ever users, 170 (61.37%) were the current consumers of tobacco. Thus out of 500 study population, 170 (34%) were current consumers. The prevalence of ever users of tobacco in this study was 55.4% and that of current users was 34% is comparable to other studies.[6,7,8] In the present study 87% of the ever users started tobacco consumption in between the age interval of 15-39yrs.Most of the studies[7,9,10,11,12] that were reviewed for age of initiation of tobacco was found to be similar and age of initiation was found to be well within the age interval as observed in the present study.

In the present study 83.5% of the current users consumed tobacco in smoking form and most (59.4%) commonly used tobacco product was cigarette. Similar observations were made by Gupta V, et al, [7] , Krishnan A, et al, [10] , Bala DV, et al, [11] , Kumar C, et al, [13] Shrivastava SRB, et al,[14] in their studies. However studies by Makwana NR , et al, [15] , Sorensen G, et al, [16] , Medhi GK, et al,[17] Sinha DN, et al, [18] reported that most current tobacco users were consuming tobacco in smokeless form. In the present study majority 47.8% of the current smokers smoke about 1-5 cigarettes/beedis/chuttas per day. Majority 80.8% of current tobacco chewers consume 1-5 packs of ghutka/pan per day. Various other studies reported similar findings. [10,13,19] In the present study majority (88.2%) of the current users were found to consume tobacco for a time period of 5 years and above. Similar findings were reported by Krishnan A, et al, [10] Kumar C, et al, [13] and Jarallah JS, et al, [20] . In the present study highest proportion (42.4%) of current tobacco consumers was seen in the age group of 40-59 years followed by age group of 15-39 years (35.9%) and difference among the various age groups was found to be statistically significant ($p<0.05$). Similar findings were reported by Rani M, et al, [3] and Medhi GK, et al,[17] where there was proportionate rise of tobacco consumption with increasing age. Subramanian SV, et al, [21] in their study about tobacco usage in 26 states of India reported that Christians and the residual category of "other religion" were less likely to smoke than Muslims or Hindus which was found to be consistent with the observations made in the study. In the current study it was observed that highest proportions (48.8%) of current consumers were seen in backward caste and difference among the various castes was statistically significant. However study by Bala DV, et al,[11] and other studies[3,21,22,23] concerning tobacco consumption among various castes showed that it was more in SC and ST population.

Most (85.3%) of the current consumers of tobacco in the present study were married which is similar to observation in other studies. [17, 21]. Most (67.6%) of the current consumers of tobacco belonged to middle class according to Prasad's classification of Socio-economic status which differed with the observations made by Rani M, et al, [3] , Subramanian S V, et al, [21] , Jindal SK,et al,[24] in their studies.

Among the current consumers of tobacco, the high school group constituted maximum (27.1%) among the literates and illiterates constituted 24.1%. The difference among the groups was statistically significant ($p<0.05$). Similar finding was noted in various other studies [3,11,17,21] where the trend of tobacco consumption was seen to decrease post high school.

Most (31.2%) of the current consumers of tobacco were unskilled workers and the difference among the occupational groups was statistically significant ($p<0.05$). Bala DV, et al, [11] in Gujarat state reported that in the occupational groups, agriculture and labour class had the highest prevalence of tobacco use which favoured with the findings of the current study. Sorensen G, et al,[16] in their study in Mumbai reported that among men as well as women, professionals were least likely to have ever used tobacco, whereas unskilled workers and unemployed individuals were most likely to have done so which was consistent with present study findings.

It was observed that majority 67(39.4%) of the current users were consuming tobacco for pleasure, followed by 56(32.9%) of them using it to get relief from tensions. Bala DV, et al,[11] reported that some of the tobacco consumers took up this habit either to decrease fatigue and mental tension or to relax which favours with the observations. However this differs with a study made by Ravishankar TL, et al,[12] in Uttar Pradesh state where it was noted that curiosity was the main reason behind for trying tobacco .

In the present study the maximum source (67.1%) of initiation to tobacco consumption among current users was by peers. Bala DV, et al,[11] and Kumar C, et al,.[13] reported that half of all men started tobacco use by imitating peer group.[11] In a

study conducted by Mukherjee K, et al,[19] in Mumbai it was seen that 70% of the students quoted peer pressure as the reason for initiation of ghutka chewing . Makwana NR, et al,[15] in the villages Alia, Bada, Vijarakhi and Theba, of Jamnagar district, Gujarat, noticed that main inducing factor for addiction was found to be friends (61.69%) . Most of the studies attribute tobacco initiation to peer pressure among current consumers except the study done in Cambodia [8] which stated about the influence of older relatives.

Most common reasons for cessation of tobacco consumption among ever users was self motivation (57.9%) followed by medical advice (30.8%). Joshi U, et al,[9] Bala DV, et al,[11] , Shrivastava SRB, et al,[14] in their studies mentioned medical reasons for quitting tobacco among ever users which was found to be consistent with one of the reasons of quitting tobacco among ever users in the present study.

About 61.2% of the study population and 51.8% of current consumers were aware of the adverse effects of tobacco consumption. Similar findings were noted in studies done by Ravishankar TL, et al, [12] Joshi U, et al, [9] Sinha DN, et al, [6] where 83% , 55.6% and 94.2% of the study subjects were aware of the disastrous effects of tobacco on health.

Conclusion

The present study showed a high prevalence of 55.4% tobacco use among male ever users aged 15 years and above in Nellore city. A prevalence of 34% has been noted in male current users of the same age group. This calls for an urgent need to initiate programmes at various levels to generate awareness about health hazards of tobacco consumption. Specific programmes targeting the youth about ill effects of tobacco have to be started like observing "No Tobacco Day" in educational institutions and youth clubs. Ill effects and hazards on using tobacco should be incorporated into the syllabi of school and college students. Ban on the sale of tobacco products near the premises of educational institutions should be strictly implemented. As the prevalence of tobacco is high in illiterates, mass media communications like T.V, movie clippings, talk shows, radio, news paper etc should be effectively utilized to create awareness. Posters and bill boards at prominent places of public interest like railway stations, bus stations, parks and cinema halls should be aptly displayed. It is seen in the study that peers formed the major (67.1%) source of initiation of tobacco use among current users. To alleviate this problem peers should be identified and counseling sessions should be started where in the tobacco related health hazards are comprehensively dealt.

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ORIGINAL RESEARCH ARTICLE

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Epidemiology and Management Outcome of Burnt Patients admitted at Tertiary Hospital, Nanded, Maharashtra-A Prospective Study

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ABSTRACT

To assess the epidemiology and management outcome of burnt patients admitted at Shri Guru Govind Singh Memorial Government Hospital, Nanded, Maharashtra. The present prospective study was carried out from 1st February 2012 to 30th June 2012.Permission of Institutional Ethical committee was sought before commencement of study. We decided to enroll every alternate patient getting admitted in burn ward during study period. Patients were interviewed and followed by Investigator(s) till their management outcome. Patients were interrogated using predesigned questionnaire after obtaining informed consent. Data was analyzed by using Open Epi Version 2.3 by maintaining the anonymity. Out of 208 admitted burns patients, total 104 were included(alternate patient) of these 36 (34.6%) were males and 68 (65.3%) were females. Ninety (86.7%) cases reported mishap/accident occurred at home. Burn injuries were due to flame 64(61.5%), scald 21(20.1%), hot liquid 10(9.6%), chemical 5(4.8%), electrical 4(3.8%). We observed the percentages of TBSA in the range from 5% to 98%. The mean of hospital stay was 15.25±11.93 days. We found that burn cases 51(49.0%) got cured, 23(22.1%) DAMA, 25(24.0%) died, and 5(4.8%) referred to higher center. Study underlines importance of increasing public awareness about fire safety measures through school and media.

Key words: Burn, Hospital stay, TBSA, Epidemiology, Outcome.

Introduction

Burns can cause psychological, social and physical problems for the patient and family[1]. It is an economic and social burden on the national health services, then patients must be cared more in hospitals[2]. It is a global public health problem, accounting for an estimated 1,95,000 deaths annually in the world. In India, over 10,00,000 people are moderately or severely burnt every year[3] .

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As India moves forward in its quest for growth, development and economic prosperity, the dark and ugly side of this progress is rapidly emerging due to the absence of accompanying safety systems[4]. In developing countries like India, burn injuries continue to be a challenging problem due to poor medical facilities, lack of specialist doctors, absence of public awareness[5] and the increased cost of treatment, all of which have an impact on the outcome[6].

Epidemiological studies in each environment is a prerequisite to effective planning and optimization of this injury preventive measures to minimize the devastating effects of burn in all age groups[7] as well as have a important role in recognition of risk factors and high risk groups[8]. The epidemiology of this injury varies from one part of

the world to another and even in the same environment over a time period[9].

Literature review showed majority of studies were planned by using retrospective study design and very few followed prospective study design. By considering the different geographical setting of Marathwada region which is considered to be backward region in Maharashtra, Nanded is one of the backward district of Marathwada region of Maharashtra and have a predominantly agrarian economy. We conducted the present prospective study to assess the epidemiology and management outcome of burnt patients admitted at Shri Guru Govind Singh Memorial Government Hospital(SGGSMGH), Nanded, Maharashtra

Material and methods:

The present prospective study was carried out at SGGSMGH attached to Dr. Shankararo Chavan Govenment Medical college, Nanded from 1st February 2012 to 30th June 2012.Permission of Institutional Ethical committee was sought before commencement of study. SGGSMH is a 508 bedded teaching hospital and tertiary care center. On an average monthly 40 patients get admitted with burns. Considering heavy influx of burn cases and time constrain we decided to enroll every alternate patient getting admitted in burn ward during study period. Investigator(s) visited burn ward daily and gathered data from newly admitted patients and/or from their relatives/attendants who rescued patient from accidental site. After obtaining informed consent, data with respect to demographic profile, causes of burn, details of burning incident, place of burn, total body surface area(TBSA) etc was collected with help of predesigned questionnaire by interviewing patient and/or relatives/attendants. On subsequent visits investigator(s) tried to get more information about those questions which were not answered on first visit due to serious condition of patient or no one was available with patient to share authentic information. All enrolled patients were followed till end, their length of stay, outcome in the form of cured, discharged against medical advice(DAMA), referred to higher center or death were noted down. TBSA was calculated by using Wallace's rule of nine in adult and Lund & Browder's chart in pediatrics age group[8]. The response rate was 100%. Data was analyzed by using Open Epi Version 2.3 by maintaining the anonymity.

Results:

In our study out of 208 admitted burns patients, every alternate patient during study period were included. i.e 104 patents. Out of 104 patients, minimum age was 2 years, maximum age was 65 years and mean age of patients was 28.36± 12.56. Highest number cases 55 (52.8%) were in the 16-30 years age group where as lowest number of cases 08(7.6%) in the >46 years age group. Almost double the number of females 68(65.4%) got burn injuries than males 36(34.6%). Highest number of burn cases were in housewives 39(37.5%) followed by agriculture laborer 14(13.5%).

90(86.7%) cases reported mishap/accident occurred at home while less than 10% suffered burn injuries at work place. Two third patients belonged to rural area against one third to urban area. Slightly less than fifty percent (40.4%) burns were illiterate

Table No.1. Distribution of causes of burn injuries according to age and sex

Age group$^{\infty}$ (Years)	Flame	Scald	Hot Liquid	Chemical	Electrical	Total
>15	05(4.8)	02(1.9)	05(4.8)	00(00)	01(0.9)	13(121.5)
16-30	36(34.6)	14(13.4)	01(0.9)	01(0.9)	03(2.8)	55(52.8)
31-45	18(17.3)	03(2.8)	03(2.8)	04(3.8)	00(0.0)	28(26.9)
>46	05(4.8)	02(1.9)	01(0.9)	00(0.0)	00(0.0)	08(7.6)
Sex$^{\divideontimes}$						
Female	52(50.0)	06(5.7)	07(6.7)	02(1.9)	01(0.9)	68(65.4)
Male	22(21.1)	05(4.8)	03(2.8)	03(2.8)	03(2.8)	36(34.6)
Total	64(61.5)	21(20.1)	10(9.6)	05(4.8)	04(3.8)	104(100)

Figures in parenthesis denote percentages $^{\infty}\chi 2= 27.88$, d(f) 12, $P<0.05$, $^{\divideontimes}\chi 2= 5.75$, d(f) 4, $P>0.05$

Table No.2. Distribution of Total Burnt Surface Area of burn injuries according to age and sex

Age group* (Years)	>18	19-36	37-54	55-72	>73	Total
>15	04(3.8)	04(3.8)	03(2.8)	02(1.9)	00(0.0)	13(121.5)
16-30	11(10.5)	16(15.3)	14(13.4)	07(6.7)	07(6.7)	55(52.8)
31-45	02(1.9)	10(9.6)	10(9.6)	01(0.9)	05(4.8)	28(26.9)
>46	02(1.9)	02(1.9)	02(1.9)	02(1.9)	00(0.0)	08(7.6)
Sex$^{\Delta}$						
Female	11(10.5)	21(20.9)	19(18.2)	08(7.6)	09(8.6)	68(65.4)
Male	08(7.6)	11(10.5)	10(9.6)	04(3.8)	03(2.8)	36(34.6)
Total	19(18.2)	32(30.8)	29(27.9)	12(11.5)	12(11.5)	104(100)

Figures in parenthesis denote percentages $^{*}\chi 2$= 11.01, d(f) 12, P>0.05, $^{\Delta}\chi 2$= 0.97, d(f) 4, P>0.05

and number of burn cases decreased as the level of education increased i.e. primary 24(23.1%), middle 17(16.3%), high school 18(17.3%), and so on…

We observed the percentages of TBSA in the range from 5% to 98% and mean 41.0673±22.81%. Out of 104 patients, 61(58.7%) patients had 19-54% TBSA.

Table No.3. Relationship between length of hospital stay with Total Burnt Surface Area of burnt patients

Length of Hospital Stay (days)	TBSA					Total
	>18	19-36	37-54	55-72	>73	
1-7	11(10.5)	04(3.8)	05(4.8)	02(1.9)	08(7.6)	30(28.8)
8-14	02(1.9)	09(8.6)	08(7.6)	04(3.8)	01(0.9)	24(23.0)
15-21	04(3.8)	12(11.5)	07(6.7)	04(3.8)	02(1.9)	29(27.8)
22-28	02(1.9)	04(3.8)	02(1.9)	01(0.9)	01(0.9)	10(9.6)
≥29	00(0.0)	03(2.8)	07(6.7)	01(0.9)	00(0.0)	11(10.5)
Total	19(18.2)	32(30.8)	29(27.9)	12(11.5)	12(11.5)	104(100)

Figures in parenthesis denote percentages $\chi 2$= 31.20 , d(f) 16, P<0.05

Around two third of burn patients were married 75(72.1%), 10(9.6%) unmarried and rest were children. Majority of burn patients were belonged to Hindu religion 77(74%) followed by Muslim 21(20.2%) and Buddha 6(5.8%) religion.

As this is tertiary care center, the most of the patients were referred from primary health care centers(PHC) and rural hospitals(RH) 65(62.5%) within district and out of district. Just 12(11.5%) cases were admitted directly as these cases were from Nanded city itself. Almost one forth of patients were also got referred from private hospitals (25.9%)of Nanded city and district also.

Out of 104 patients, burn injuries due to flame 64(61.5%), scald 21(20.1%), hot liquid 10(9.6%), chemical 5(4.8%), electrical 4(3.8%). There was a significant association found between age and causes of burn injury($p<0.05$). However, no significant association was found between the sex and causes of burn injury($p>0.05$) (Table No.1)

No significant association was observed between the TBSA & age and sex and TBSA ($p>0.05$) (Table No.2). The mean of hospital stay was 15.25±11.93 days. Our study revealed significant association between TBSA and length of hospital stay ($p<0.05$)(Table No.3). We found that burn cases 51(49%) got cured, 23(22.1%) DAMA, 25(24.0%) died, and 5(4.8%) referred to higher center. There was significant association was observed among age, sex, causes of burn injuries & TBSA and management outcome of burn cases ($p<0.05$) (Table No.4).

Discussion:

The majority (52.8%) burn cases were young adults of the age group 16-30 years in the present study. This might be due to this active age group which is frequently interacts with the thermal agents at home and out of home. Our findings with respect to age group were comparable with various studies[4,8,10,11] .

Table No.4. Distribution of management outcome of burnt patients with respect to age, sex, causes of burn injuries and Total Burnt Surface Area

Variables	Cured	DAMA™	Death	Referred to higher centre	Total
Age group*(Years)					
>15	08(7.6)	00(0.0)	02(1.9)	03(2.8)	13(121.5)
16-30	27(25.9)	16(15.3)	11(10.5)	01(0.9)	55(52.8)
31-45	13(12.5)	05(4.8)	09(8.6)	01(0.9)	28(26.9)
>46	03(2.8)	02(1.9)	03(2.8)	00(00)	08(7.6)
Sex#					
Female	30(28.8)	15(14.4)	19(18.2)	04(3.8)	68(65.4)
Male	21(20.9)	08(7.6)	06(5.7)	01(0.9)	36(34.6)
Causes of Burn injuries%					
Flame	22(21.2)	16(15.3)	24(23.1)	02(1.9)	64(61.5)
Scald	12(11.5)	07(6.7)	00(0.0)	02(1.9)	21(20.1)
Hot Liquid	09(8.6)	00(0.0)	00(0.0)	01(0.9)	10(9.6)
Chemical	04(3.8)	00(0.0)	01(0.9)	00(0.0)	05(4.8)
Electrical	04(3.8)	00(0.0)	00(0.0)	00(0.0)	04(3.8)
Total Burnt Surface Area$					
>18	15(14.4)	03(2.8)	00(0.0)	01(0.9)	19(18.2)
19-36	20(19.2)	07(6.7)	02(1.9)	03(2.8)	32(30.8)
37-54	11(10.5)	08(7.6)	09(8.6)	01(0.9)	29(27.9)
55-72	04(3.8)	02(1.9)	06(5.7)	00(0.0)	12(11.5)
>73	01(0.9)	03(2.8)	08(7.6)	00(0.0)	12(11.5)
Total	51(49.0)	23(22.1)	25(24.0)	05(4.8)	104(100)

™-Discharged against Medical Advice, Figures in parenthesis denote percentages

* $\chi2$= 17.682, d(f) 9, P<0.05, # $\chi2$= 3.875, d(f) 3, P<0.05,

% $\chi2$= 30.856, d(f) 12, P<0.05, $ $\chi2$= 35.447, d(f) 12, P<0.05

Our study showed female predominance (65.4%). Alike results regarding sex were found by many studies[6,8,10,11] . In India, till today job of females is confined to be child rearing and cooking, due to the diversion of attention towards the child while cooking, leads to burn accidents. Our study showed higher percentages (37.5%) of housewives suffered from burn injuries. Other studies[8,10,11] also reflected similar results in relation to occupation.

As the majority of burn victims were females involved in housework, they caught ablaze at home(86%). The similar finding mentioning home as the place of accident for burns, were reported by other studies[4,8,10]. In the present study, the majority (76.9%) burn cases were from rural areas. It is the representation of population distribution in India where three fourth population is residing in rural areas. Parallel results about rural predominance were shown by referred studies[4,8,10,11]. Unawareness about fire safety measures in illiterate people (40.4%) was the one of the reason for higher morbidity and mortality in them in the present study. Corroborative results showed by the other studies[8,10]

About ¾ cases(72.1%) were married in the present study. The similar results were reported by other studies[8,10]. The religious composition of burn cases was similar as per Indian census data 2001[12] for Hindu and Muslim. The same findings for religion were reported by Chakraborty et al[11].

In our study, the majority of patients were referred from the PHC and RH (62.5%) followed by from private hospitals (25.9%).PHC and RH manage the mild burn injuries, and for extensive/severe burn injuries, usually first aid was given and patients were referred to tertiary care center for further management. In the present study quarter of burn patients got treated at nearest private hospitals first and then referred to our hospital, as burns management requires longer hospital stay and costly medicines to procure, patients might have opted for government hospitals in later stages

The flame was the most common cause of burn injuries as reported in many studies[4,6,8,11,13]. Cheap and unsafe measures were used for cooking like kerosene pressure stoves, traditional chulhas.

Another very common reason given was lighted lamp which fell down on the bed.

In the present study, hospital stay was longer in mid range TBSA compared to higher range TBSA and lower range TBSA as majority of higher range TBSA patients died after short hospital stay and lower range TBSA were discharged after got cured in short duration. So hospital stay was minimum at both the extremes of TBSA.

Outcome analysis revealed that 49% cured, 22.1% DAMA, 24% died and 4.8% referred to higher centers in our study. Haralkar et al[10] reported the patients discharged with complete cure(13.78%) and discharged with residual functional disability(4%) but similar finding regarding DAMA(16.44%). Comparable finding regarding deaths reported by Chakarborthy et al[11](23.5%). More deaths were reported by Shanmugakrishnan et al[6] (57.33%), Haralkar et al[10] (67.78%), Shankar et al[4](41.6%) and Akther et al[8] (46.36%). More number of females got cured as compared to males because females outnumbered males in our study. The deaths of burn patients were more due to flame. The majority of cured patients had the 19-36% of TBSA. Large number of cured patients had the 15-21 days hospital stay.

About 22% patients Discharged Against Medical Advice (DMMA), as burn patients were needed to be admitted for long duration and relatives accompanying burn patient in ward observe other serious patients admitted in government hospital succumbing to burn injuries this may lead relatives to take away their patient to some other private hospital which they consider provides better care than government hospital.

Results of the present study revealed that majority of burn were domestic and flame type. Young married females were found to be more at the risk of burn injuries, public awareness should be increased by including fire safety lessons in school curricula and campaigning fire safety measures through media.

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12. Govt. of India (serial online) 2001[cited 2012 Nov 06] Census Data: India at a glance Religious Composition. Census of India. Office of the Registrar General and Census Commissioner, Ministry of Home Affairs. Available from: URL: http://www.censusindia.gov.in/Census_Data_2001/India_at_glance/religion.aspx.

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Serial Publications - Part 2

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Specialty Medical Blogs: A tool to disseminate Health Information

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Abstract

Medical blogging has the potential to convey a provider's/ physician's sense of caring and knowledge about medicine. Medical blogs post contains discussion about clinical cases, information about diseases, treatments, images & videos relating to clinical trials, news, and information on current research or trials regarding a particular treatment or disease. The author highlights the evaluation of blogs; features and type of blogs are discussed. The article describes blogs under each medical specialty are discussed.

Key words: weblogs, Medical blogs, health information, health information literacy.

1. ANESTHESIOLOGY BLOGS:-

a. **Anesthesia and critical care blog**: organized by Dr.Laszlo Hollo, UK privately maintained site about anesthesia and critical care and its latest developments etc. http://hollos.net

b. **GratZ's blog**: anesthesiologists there are no substitutions. http://www.blog.gratzs.com

c. **The Anesthesia blog**: anesthesia, anesthesiology, anesthetists and other things related to gas and passing of it. It was founded in 2008. http://www.theanesthesia.blog.com

d. **The sandman**: organized by Ergosum, Israel. A blog deals with practice of anesthesiologist. http://quietusleo.blogspot.com

e. Anesthesiology Warehouse: Lots of information on Anesthesia, Medicine, technical Issues http://anesthesio.blogspot.com/

f. buzzocaine.. Your daily anesthesia buzz **:** An earnest attempt to provide updates in the field of anesthesia. http://buzzocaine.blogspot.com/

g. Atrial Fibrillation Blog**:** Blog for atrial fibrillation patients http://AtrialFibrillationBlog.com

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2. **PATHOLOGY BLOGS**

a. **Digitalpathology blog: organized** by keith Kaplan, surgical pathologist interested in digital pathology. It is weblog for digital pathology community and laboratory professionals.
http://www.tissuepathoogy.typepad.com/weblog/

b. **Lab soft News**: pathology education consortium. An ideal factory for pathology informatics and clinical laboratory since 2005.

http://www.labsoftnews.typepad.com

c. **Neuropathology blog**: organized by Brain E Moore. The blog focuses mainly on nervous system tumors, neurodegenerative disease, muscle and nerve disorders , etc.
http://www.neuropathologyblog.blogspot.com

d. **oncopathology:** organized by Dr. Prashant Jam. The blog focus on recent updates in oncopathology as well as evaluate the importance of pathologist in management of cancer.
http://www.oncopathology.info

e. **pathtalk**: weblog about pathology and laboratory medicine
http://pathtalk.org

f. **The 1x objective**: Dr. karl created to serve medicine/pathology/information new blog as seen through the editorial eyes of a resident physician.
http://robstak.wordpress.com

g. **The Daily Scan**: organized by Ole Eichhorn. The blog aim is to make pathology extraordinary.
http://blog.aperio.com/

h. **The Daily Signout**: Mark D Pool created and blogs focuses mainly on surgical pathology and laboratory medicine for practicing pathologists.
http://pathlabmed.typepad.com/surgical_pathology_and-la/

i. **Lab Line by the Doctor's Doctor** : .Dr. Thomas Wheeler is Chair of the Department of Pathology & Immunology at Baylor College of Medicine in Houston, Texas. This blog provides commentary on a broad range of topics from anatomic pathology (surgical, autopsy, cytopathology) to clinical pathology (hematopathology and chemical pathology, transfusion medicine
http://blogs.medscape.com/thomaswheeler

j. **Host-Pathogen Passages :** This blog will provide commentary on a broad array of topics pertaining to infectious diseases, including basic and clinical research, clinical care, public policy, and education. Dr. Nosanchuk welcomes comments, suggestions, and collaborative ideas pertaining to this forum.
http://blogs.medscape.com/joshuanosanchuk

3. **RADIOLOGY BLOGS**

a. **American college of Radiology blog**: it provides new place to

explore ideas and exchange information on topics to the wider radiology community. http://acrblog.typepad.com

b. MRI BLOG**:** Clinical applications of Magnetic resonance imaging http://limpeter-mriblog.blogspot.com

c. **Imaging news-CT, MRI and PET**: current clinical and industry news about catscan , MRI and PET Scan http://diagnostic-imaging.blogspot.com

d. M**usculoskeletal & Orthopedic MRI**: created by Vic David felasfa wodaja. musculoskeletal radiology with a heavy emphasis on MRI http://musculoskeletalmri.blogspot.com

e. **Radiology Technology News**: it provides items and news of interest to X-ray technologists and diagnostic imaging professionals. http://radtechns.blogspot.com

f. **RiTradiology**: It shares knowledge in radiology and related fields of physicians around the world of high quality images and scientifically proven contents in a form of brief, easy to read post relating to head-to toe imaging, diagnosis of common disease, classic radiology signs, quality in radiology, radiation safety. http://radiologyinthai.blogspot.com

g. Tomography Blog: Imre Kissik and Andras Szekely created the blog. This blog indulge in the radiology and nuclear medicine fascinating and open to all fields of world of radiology , medicine and nuclear medicine http://tomographyblog.com

h. **Scan man's rotes**: created by Dr. Vijay sadasivam, radiologist from Salem, Tamilnadu. The blog post entries are related to radiology or medicine in general. http://www.catscanman.net/blog/

i. **Summer Radiology site**: A unique application of web 2.0 in radiology since 2004. One of the first movers in the world of radiology. http://www.sumerdoc.blogspot.com

j. The Radiology Blog **:** Information on radiology education, radiology training, and radiology jobs.

http://theradiologyblog.blogspot.com

4. **MICROBIOLOGY BLOGS**

a. **Microbiology bytes:** created by Dr. Alan cann. It posts latest news about microbiology since 2006 http://www.microbiologybytes.com/blog/

b. **Microblogogology**: created by Dr. Lorraine Cramer. The site provides for the little things that get you down in microbiology. http://www.microblogology.com

c. **Micro writers**: created by Dr. Ramy Karan Aziz. It posts about anything that your eyes cannot see the microbes.

http://micro-writers.egybio.net/blog/

d. **Lab rat**: created by S.E. Gould. The blog is meant for biochemist who harbours secret dreams of becoming a microbiologist .it was updated entries since 2008 http://labrat.fieldofscience.com

e. **Spirochetes Unwound**: Microbe Fan. Blogging about those twisty bacteria known as Spirochetes and studies bacterial diseases. http://spirochetesunwound.blogspot.com

f. **Twisted bacteria**: created by Cesar fanchez in 2009 and blogging around microbial world of communication of science. http://twistedbacteria.blogspot.com

g. **Small things considered- The Microbe blog:-** Moselio schaechter that is designed to share appreciation for the width and depth of microbial activities of the planet. http://schaechter.asmblog.org

h. **Times Microbial**: created by Tim Sampson. It provides recent developments in microbiology and their ramifications on modern health and biotechnology. http://www.phagehunter.org

i. Blogging for Bacteriophage **:** blog emphasis the recent developments of microbiology and their ramifications on modern health and biotechnology. http://www.thewanderingminstral.blogspot.com

5. TRANSFUSION MEDICINE BLOGS

a. **Musings on transfusion medicine**: Consultant on using the Internet for transfusion-related CE, previously a blood bank instructor at the University of Alberta and a medical laboratory technologist with Canada's blood supplier **http://traq.blogspot.com/**

b. **Blood Bank Guy Blog** : Seemingly random discussions on various transfusion medicine topics by Joe Chaffin, MD **http://bbguy.blogspot.com/2011/01/2011-blood-bank-guy-thoughts.html**

c. **Hemoblogin**: http://bloodcenter.stanford.edu/blog/

6. HEMATOLOGY BLOGS

a. **Hinsdale Hematology Oncology's Blog** Physicians of Hinsdale Hematology Oncology Associates named Top Doctors of Chicago http://hhoaltd.wordpress.com/

b. Hematology and Oncology: Dr. Palchak and his staff are dedicated to the treatment of malignancies. http://pcroncology.com/?page-id=46

c. The Sickle Cell Blog : This blog will chronicle the wonderful, poignant and fun filled days of living, loving and surviving with sickle cell anemia.

http://sicklecellblog.blogspot.com/2009/12/american-society-of-hematology.html

d. **clinical cases blog**:- Editor: V. Dimov, M.D., Assistant Professor at the University of Chicago

http://casesblog.blogspot.com/2010/01/hematology-and-oncology.html

e. Roger B. Cohen Blog: focus on hematology and oncology. http://penn-medicine-physician-announcements.blogspot.com/2010/12/division-of- hematologyoncology-welcomes.html

f. **hematology:**a democratic space to clarify about the diseases of the blood. http://doencasdosangueenglish.blogspot.com/

7. NUCLEAR MEDICINE BLOGS

a. **mdphysics.com**:- A weblog for medical physics community. The rapid advances in nuclear medicine have made it essential for medical physicists to have a strong understanding of the field, its relevant technologies and clinical applications. http://www.mdphysics.com/

b. **Areva Northamerica – Next Energy blog:** This blog discussed efforts in nuclear medicine and the AREVA Med project. http://us.arevablog.com/tag/nuclear-medicine/

c. **Mai patient blog:** This area of diagnostic imaging uses radioactive tracers to detect certain diseases or abnormalities in a body. While it sounds scary, millions of nuclear medicine studies have been safely performed. Nuclear medicine is not exactly a household name. http://maiedge.com/patient-blog/nuclear-medicine-2/what-is-nuclear-medicine/

d. **AZCNMT Blog**: blog focuses on nuclear medicine and cardiology, nuclear cardiology http://azcnmt.com/blog/

8. RADIOTHERAPY BLOGS

a. Radiotherapy UK: This blog is intended to provide information about radiotherapy treatment, in particular the latest in IGRT and IMRT treatment available in the UK. http://radiotherapy.blog.co.uk/

b. Jen's 3N Breast Cancer Chemo + Radiation Blog: This blog is written mainly for family and friends who want to keep up to date with my health and well-being as journey through the morass of healing this triple negative breast cancer. http://3nbreastcancer.blogspot.com/

c. Radiation oncology blog: it is an amalgam of information, talks given, old examination questions, reflections and such like that relate to radiation oncology **http://radonc.wikidot.com/**

8. TELEMEDICINE BLOG

a. Telemedicine Network Associated Blog – Broadcasting everything relating to Telemedicine and Telecare http://blog.telemedicinetwork.org/

b The Bob Blog: Dr Bill Crounse's HealthBlog; Federal Telemedicine News.

www.Bob-thebobblog.blogspot.com

10. ENDOCRINOLOGY BLOGS

a. **Bitter sweet diabetes**: organized by karan. Because life with diabetes isn't all bad. http://bittersweeterdiabetes.org

b. **Diabetes mine**: created by tenderich. A gold mine of straight talk and encouragement of people living with diabetes.
http://www.diabetesmine.com

c. **Six until me**: kerri morrone sparling was the moderator of the blog. Daily trails of managing type 1 diabetes.
http://sixuntilme.com

d. **bigabetes**: informative diabetes conversation featured and quality diabetes bloggers.
http://www.dlife.com/diabetes.org

e. Dedicate to Diabetes Free: In Dedicate To Diabetes Free, you can find all about Diabetes: Facts, Prevent, Cure...etc. This blog dedicate to make diabetes free world

f. http://diabetfree.blogspot.com

Fight With Diabetes: This blog describes the the real experience of life before and after the Diabetes

http://www.fightwithdiabetes.blogspot.com

g. **About diabetes disease and risk complication:** Understanding about diabetes disease, symptoms, characteristic, early warning, treatment and prevention for survive and better live

http://mydiabetesnotes.blogspot.com

h. **Manual of Diabetes mellitus:** This blog consists of posts discussing on various aspects of diabetes mellitus such as types of diabetes, treatment options, insulin therapy, complications, etc.
http://manualofdiabetesmellitus.blogspot.com/

i. **Heads and Tales: The Neuroendocrine Blog of Alan R. Jacobs, MD**: A leading expert in neuroendocrinology, Dr. Alan Jacobs has extensive clinical and research experience in behavioral neurology.
http://blogs.medscape.com/alanjacobsmd

11. ONCOLOGY BLOGS

a. **Breast Cancer: Fight Now by Dr. Aaron Tabor**: Latest medical research and news on breast cancer, breast cancer awareness etc
http://breastcancerfightnowbydraarontabor.blogspot.com

b. Cancer treatment: Information on standard, complementary, and alternative methods of cancer treatment.
http://health-cancertreatment.blogspot.com

c. OncoBlog: Dedicated to helping everyone who faces cancer through research, patient services, early detection, treatment, and education, information for patients, caregivers, facts on cancer symptoms, treatments, and recovery.
http://oncoblog.com

d. Carcinoid's Blog**:** The Carcinoid Cancer Foundation's blog gives the latest information about carcinoid and neuroendocrine tumors.
http://carcinoid.wordpress.com

e. **Lung Cancer Helper**: News, information and links about the terrible disease lung cancer,
http://lungcancerhelper.blogspot.com

f. **Uterine Cancer Treatment:** An information site for laymen on the basic medical information, diagnosis, and treatment options for uterine cancer
http://uterine-cancer-treatment.blogspot.com/

g. Onco'Zine - The international Cancer Blog**:** The International Cancer Blog, reports about current research and development in hematology and oncology
http://oncozine.blogspot.com

h. **Doctordavid blog**: David Loeb. purpose of the blog is to write informally about pediatric oncology, cancer research, cancer treatment etc

http://doctordavidblog.blogspot.com

i. **HemOncToday.com blog**: created by Noelle Lo conto . the blog regularly updating and professionally written hematology and oncology blog about current trials, treatment and issues in hemo/onco fields.
www.hemoncotoday.com/blog.aspx

j. **Dr. Len's cancer blog**: created by J Leonard Lichtenfeld . A blog of American cancer Society.
http://www.cancer.org/aboutus/drlensblog/default

k. **Cancer wise**: cancer blog from MD Anderson cancer centre.
http://www2.mdanderson.org/cancerwise

l. **pallimed**: A hospice and palliative medicine
http://www.pallimed.org

m. **Tumors galore**: The blog examines the realm of tumors and other abnormalities
http://tumourgalore.blogspot.com

12. GASTROENTEROLOGY BLOGS

a. Endoscopia Ginecologica: laparoscopia, histeroscopia, ginecologia, embarazo, cirugia, fertilidad, esterilidad, quiste, mioma, endometriosis, paciente
http://gineendoscopia.blogspot.com

b. Hepatitis History and Treatment Plan: Gives all information about Hepatitis and its treatment plan free of cost
http://hepatitis-info.blogspot.com

c. **Gut Reaction**: Dr. Jason Swoger and Dr. Miguel Regueiro, gastroenterology created the blog. It focuses on treatment of inflammatory bowel diseases, including ulcerative colitis, and Crohn's disease, covering new developments in diagnosis and treatment.
http://blogs.medscape.com/gutreactio

d. Biologics: the New Frontier inflammatory bowel disease (IBD) includes Crohn's disease and ulcerative colitis.

http://www.lifebridgeblogs.org/2011/02/21/biologics-the-new-frontier/

e. **NeuroUroGastro Preclinical Research Blog: The blog discuss the science and business of pelvic visceral research, including normal physiology.**

http://neurourogastro.typepad.com/blog/

f. Gastro Girl: Passionate about digestive health.

http://gastrogirl.blogspot.com/2011/02/tummy-rumbling-with-excitmentgastro.html

g. Dysphagia :serving the dynphagia professionals since 1995, resources for swallowing and swallowing disorders
http://dysphagia.com/blog

h. **Crohn's Disease and Ulcerative Colitis: T**he good, bad and funny of inflammatory bowel disease
http://www.ibdblog.com/

13. NEPHROLOGY BLOGS:

a. **Allen's blog**: moderated by Allen NIssenson, he shares his thoughts and comments on ever changing world of nephrology.

http://www.davita.com/physician/allen-blog

b. **Nephron power**: organized by Kenar Jhaveri. The blog posts daily updating with latest medical information, fun facts about the kidney and helpful links.
http://www.nephronpower.com

c. **Uremic frost**:- moderated by Dr. simon prince. Neprhology through private practice.kidney duetors perspective.
http://www.uremicfrost.com

d. **Articles on Kidney:** Blog provides information on Kidney Disorders, Kidney Cleansing, Kidney Stones,Kidney infection and other Kidney related topics
http://info-kidney.blogspot.com

e. **Partly post The Kidneys:** promoting health information technology and evidence-base medicine and increasing availability of treatments, technologies, innovations, and information**.**
http://partlypostthekidneys.blogspot.com

f. hypertension**:** It's about Systemic hypertension
http://hypertensionsac.blogspot.com/

14. NEUROLOGY BLOGS

a. Brain Waves**:** Zack Lynch. A unique blog focusing on how brain research is changing the world
www.brainwaves.corante.com

b. **Child Neuropsychology**: Dr. Jonathan Reed founder of the blog, focuses on child hood disorders, including dyslexia, dyscalcula, ADHD, Brain injury, learning disabilities, autism, epilepsy.
http://www.drjonathanreed.co.uk/wordpress.com

c. **Eide Neurolearningblog**: created in 2004 by Dr. Fernette and Brock eide. It has been regularly updated with useful content relating to brain based learning and learning styles, problem solving and creativity, dyslexia, attention deficit , disorders , autism .
http://eideneurolearning.blogspot.com

d. **Neurodudes:** moderated by Neville sanjana, Baye shanks and Stephen larson. It is intended to intersection of neuroscience.
http://neurodudes.com

e. **neurologica**: organized by steven Novella, the blog posts entries relating to daily fix of neuroscience, skepticism and critical things.
http://www.theness.com/neurologicalblog

f. **Neuro philosophy**: blog abut neurology , neuroscience and member of science blog
http://scienceblog.com/neurophilosphy/

g. **Neurotopia**: blog about neurology and neurosciences. Member of scienceblog.com
http://scienceblog.com/neurotopia

h. **Sharp Brains**: encephalon organizer. Selection of the best neuroscience and psychology blog posts.

http://sharpbrains.com/resources/encephalon.blog-carnival

i. **Dyskinetics**: Dyskinetics is dedicated to discussing movement disorders and current research in the field. Dr. Matthew Barrett is a fellow in Movement Disorders at Beth Israel Medical Center in New York City.
http://blogs.medscape.com/mattbarrett

j. **Commissural Connections**: Samuel Pleasure created the blog. He writes about issues of interest to neurologists, focusing on basic science with significant translational implications for neurologists
http://blogs.medscape.com/sampleasure

15. TRANSPLANTATION BLOGS

a. Merv Sheppard's Transplant Network:-A resource for information about organ and tissue donation, organ transplants and the diseases and conditions that cause the need for a transplant.
http://www.blogcatalog.com/blogs/merv-sheppards-transplant-network

b. **Matter of life and breath blog**: life, lung transplant, and cystic fibrosis
http://amatteroflifeandbreath.blogspot.com

c. **Miss Madison**: created by stephaine husted and the blog describes journey of heart transplantation since 2009
http://cooperandmadison.blogspot.com

d. **Transplant Athelete blog**: transplant blog on net
http://tansplant.transplant.athelete.com/

e. **Transplant hope for mark**: kellie, kidney transplant, 2008
http://transplanthopeformark.blogspot.com

f. **wendey journey** : created by Lee wendy and Missy .A double lung transplant
http://wendytransplant.blogspot.com

16. NEUROSURGERY BLOGS

a. **The spine clinic** : For all patients with spinal painful conditions, for all medical students, for all spine specialists, and for everyone, We introduce this site and our services (diagnostic, curative, and educational
http://spineclinic.wordpress.com/

b. **Neurospine Update** : It is a small dream to help in knowledge distribution, search for recent advances, play a role in patient care, problem solving & prevention, and education in the fields of neurology, neurosurgery, and spine

http://neurospine.wordpress.com/

c. **Dr Steven Gelbard FAQ** : Dr Steven Gelbard answers your questions or neurosurgery. Dr Steven Gelbard MD has more than 15 years of surgical experience

http://stevengelbard.wordpress.com/

d. The Broken Brain **:** What is going on in the neurosurgeons brain - find out here - it is always pretty.

http://thebrokenbrain.blogspot.com/

e. **Sinus Infections**: Contain articles about problems with sinus infections

http://sinusinfections.blog.com/

f. Brain Tumor: Brain tumor Causes, Symptoms, Diagnosis, Treatment, and Prognosis Information on Brain Tumor Note

http://braintumornote.blogspot.com/

17. CARDIOLOGY BLOGS

a. Cardiophile: blog dedicated to enabling people to lead a heart healthy life. It aims to serve as a portal for people to understand all about our heart, its functioning, and its wonders and how to keep it healthy.

http://www.blogcatalog.com/blogs/cardiophile

b. Heart Disease Blog: A blog on heart disease. New developments in the fields of Cardiology and Internal Medicine are reviewed here.

http://healthforheart.blogspot.com

c. Cardiovascular Research**:** Latest Research on Cardiovascular Research that will be playing a role in your everyday life

http://cardiovascularresearch101.blogspot.com/

d. Heart watch blog: heart watch blog

http://www.heart-watch-blog.com/blogs/heart-watch-blog.html

e. **Dr. Wes:** Musings of an internist, cardiologist and cardiac electrophysiologist on current issues in medicine, cardiology, health care and health care policy

http://drwes.blogspot.com

f. **ECG experts Cardiology blog**: ECG,s EKG, cardiology

http://ecg-experts.blogspot.com

g. **ardiobelief:** blog describes about cardiology, health and medicine

http://cardiobelief.org

h. **oken heart syndrome**: health medicine, cardiology

http://tabibqulob.blogspot.com

i. **Pipes Are Calling - A Vascular Disease Blog:** This blog aims to highlight cases typical and atypical (but always interesting)-that illustrate the thought process of this vascular surgeon in working up and treating patients with vascular diseases.

http://blogs.medscape.com/docparkny

18. CT SURGERY BLOGS

a. **Adam's Heart Valve Surgery Blog**: Former Patient And Author, Adam Pick, blogs About Heart Valve Replacement And Heart Valve Repair Surgery
http://www.heart-valve-surgery.com/heart-surgery-blog/

b. **scarlett's heart blog**: The blog deals with child who underwent heart surgery when shw as one week old and describes tetralogy of fallot with pulmonary atresia also called pulmonary artesia vsd with MAPCAS. She was born with a complex congenital heart defect known as tetralogy of fallot with pulmonary atresia.
http://heartbabyscarlett.blogspot.com/

c. **The atheletes heart blog**: the blog aim is to offer information about athletes and heart diseases in an informal way and to encourage exchange and discussion that will help athletes build a heart-healthier lifestyle.
http://athletesheart.blogspot.com/

d. **Cooley & DeBakey - Cardiac Surgery Pioneers**: Dr. Denton Cooley and Michael DeBakey are world renowned surgeons in the field of cardiac surgery. Their achievements have taken cardiac surgery into uncharted waters and their accolades are a result of saving many lives.
http://blog.openmedicine.ca/node/226

19. UROLOGY BLOGS

a. **Dr Neil Baum's Urology Blog**: Accessible and informative posts on men's health, with a particular focus on urology.
http://neilbaum.wordpress.com/

b. **The cincinnatiurologist**: created by Gwen.roesel
http://gwenroeselmd.blogspot.com

c. **Independent urologist**: http://theindependenturologist.blogspot.com

d. Urology Surgery**:** About urology surgery diagnostic and treatment
http://urologysurgery.wordpress.com

e. Prostate Health Treatment: Prostate Health is of vital importance to every man. An enlarged or inflamed prostate can lead to urinary and reproductive problems
http://prostate-health-treatment.blogspot.com/

f. Prostex Prostate Health Blog**:** PROSTEXÂ® is a non-prescription nutritional formula proven to promote prostate health and normal urinary function.
http://www.prostex.com/Prostex-Blog/

g. Urologi menjawab**:** urology asking and answer update urology
http://urologi-menjawab.blogspot.com

20. Plastic surgery blogs

a. **Cosmetic Surgery**: latest developments in the world of cosmetic surgery along with current procedures.
http://cosmeticsurgery-com.blogspot.com

b. Hess Plastic Surgery**:** Dr. Hess is a Board Certified Plastic

Surgeon who specializes in all areas of cosmetic and reconstructive plastic surgery.

http://www.hessplasticsurgery.com/blog/

c. **Abdominoplasty4u**: In the current materialistic world, where beauty "lied" in beholders eyes but now it has gone a Scissor touch further to look more beautiful.

http://www.abdominoplasty4u.blogspot.com/

d. Aaron Stone MD - Plastic Surgery: Plastic surgery topics for non-physicians

http://aaronstonemd-plasticsurgery.blogspot.com/

e. **Denver Cosmetic Surgery Blog.com**: The blog gives you the real story about cosmetic surgery.

http://www.denvercosmeticsurgeryblog.com/

f. **Dr. David Amron Blog:** it is **a** valuable resource for those interested in or has questions regarding liposuction surgery.

http://www.drdavidamron.com

g. Glamour Plastic Surgery**:** You don't have to be a star to be glamorous.

http://glamourplasticsurgery.blogspot.com/

h. Dr. Paul Pin's Blog: blog features information on the latest plastic surgery news.

http://www.paulpinmd.com/blog/

i. **Plastic surgery101**: A bully pulpit for discussing plastic surgery medicine and news of the day.

http://plasticsurgery101.blogspot.com

j. **Suture for a living**: I may "suture for a living". But I lives to sew where I can, I sew. The blog contains medical surgical topics as well as sewing quilting topics

http://rlbatesmd.blogspot.com

Some of the website providing multiple resources for health professionals like WebMD: provides valuable health information, tools for managing the health. (http://www.webmd.com/default.htm).

Medscape medical blogs cover the practice of medicine, healthcare reform, and patient diagnosis and treatment. http://www.medscape.com/public/blogs.

Webcina (http://www.webicina.com/about/who/) through personalized Medicine which is a free, easy-to-use, multi-lingual aggregator of quality medical information and to read the latest news as well as articles about a medical specialty or a medical condition in one personalized place. Medical professionals of the 21st century have to be ready to meet the expectations of e-patients and e-patients will change the way medicine is practiced and healthcare is delivered.

Conclusion

Specialty medical Blogs can be considered a very useful and good source of information to find information about the trends and debates in specific field of medicine and also provides an opportunity to share their innovations and with colleagues and establish themselves as experts. It is incredibly hard to find quality resources focusing on a medical condition or a medical specialty. Blogs facilitates participation and conversation across a vast geographical expanse. Information pushing devices like RSS feeds permit continuous instant alerting to the latest ideas in medicine. Sharing practical knowledge and skills, and latest communication and information technologies are influencing the way other people think,

were major motivations for blogging among our medical bloggers.

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