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Short Article

Original Research Article

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Short Article

Epidemiology of Road Traffic Accidents (RTA) Reported at a Tertiary Care Hospital in Chennai

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Date of Submission: 23.01.2015 **Date of Acceptance: 14.02.2015**

Abstract

Background: Road traffic accidents happen to be a leading cause of death among young people. About 1.24 million people die each year due to road traffic accidents and cause considerable economic losses to victims and their families and nation at large. **Objective:** To study the epidemiological factors in Road traffic accident cases and the characteristics of the resultant injuries in Chennai metropolitan city. **Materials and methods:** The present cross sectional study was carried out at tertiary care hospital in Chennai. All the Road Traffic Accidents reported to Casualty Department for treatment for a period of one week were included in this Study. **Results:** Ninety percent of RTA victims were in the age group of 18-59 years and males to female ratio of 6:1. About 32% of the accidents took place between 18.01 hours to 24.00 hours and 63.6% of the type of accidents was sideways collision. Nearly 43.0 % of the vehicle was light motor vehicles. The common site of injury was lower extremities (45.4%). Road traffic accidents were fatal in 5.2% of the victims. **Conclusion:** In conclusion most of the victims of road traffic accidents were young males and productive age group with male to female ratio of 6:1. Young people need to be educated regarding Risk factors, Traffic rules and safety precautions.

Key words: Epidemiology, Road traffic accidents, Tertiary hospital.

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Introduction

The rapid urbanization and industrialization has resulted in a revolutionary increase in the number of motor vehicles globally which have led to the increase in morbidity and mortality due to road traffic accidents especially in developing countries like India. Road traffic accidents happen to be a leading cause of death among young people. About 1.24 million people die each year due to road traffic accidents and cause considerable economic losses to victims and their families and nation at large. [1] Estimated road traffic death rate per 100 000

population in India has increased from 16.8 in 2009 to 18.9 in 2013. Over the last decade the incidence of accidental deaths has witnessed an increasing trend with an increase of 44.2% for the year 2011 as compared to 2001. This figure translates into one death on the Indian roads every five minutes and is expected to escalate to one death every three minutes by 2020. [2] Between 1970 and 2010, the number of accidents increased by 4.4 times with 9.3 times increase in fatalities and 7.5 times increase in the number of persons injured, while there was an increase of 82 times in the number of registered motor vehicles and more than three times increase in the road network. [3] These Road traffic injuries depend on number of factors like Type of Accident, Colliding vehicle, site of impact etc. This study is important for setting priorities for the prevention of such injuries. The mortality and morbidity data in RTA depend on to which health care unit the victim reports for treatment. Thus the present cross sectional study was carried out to understand the various epidemiological factors in Road traffic accident cases and the characteristics of the resultant injuries in Chennai metropolitan city.

Materials and Methods

The present cross sectional study was carried out at tertiary care hospital in Chennai. All the Road Traffic Accidents reported to Casualty Department for treatment for a period of one week were included in this Study. The information about the patients admitted as cases of Road Traffic Accidents were obtained from the accident register of casualty department of the hospital daily and then these patients were contacted in the trauma wards. Thus the study included a total of 423 victims of Road Traffic Accidents. Using interview Technique as tool for data collection the demographic and injury characteristics were recorded on a pre-designed proforma. The site and nature of injury were recorded as reported in the case sheets of the patients by the specialists. The statistical analysis included calculation of simple proportions.

Results

A total of 423 cases of road traffic accidents were reported during the study period of 1 week. In this study majority of the victims (90.8%) were in the age group of 18-59 years and males (85.8%). Among the victims of road traffic accidents 32% of the accidents took place between 18.01 hours to 24.00 hours and 63.59% of the type of accidents was sideways collision. On analysis of the type of vehicle showed 43.02 % of the vehicle was light motor vehicles. Majority of the injury was fracture (65.95%) followed by multiple injury (18.91%). The common site of injury was lower extremities (45.39%) followed by multiple sites injury (26.96%). Road traffic accidents were fatal in 5.2% of the victims [table1].

Discussion

Present study revealed most of the victims of road traffic accidents were young males and

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Table1. Factors related to Road Traffic Accidents (RTA)

Factors related to road traffic accidents	Frequency (%)
Age distribution	
<18 years	34(8.0)
18-59 years	384(90.8)
60 and above	5(1.2)
Total	423(100)
Sex distribution	
Male	363(85.8)
Female	60(14.2)
Time of accidents	
6.01-12.00	95(22.5)
12.01-18.00	129(30.5)
18.01-24.00	135(32)
0.00-6.00	64(15)
Type of accident	
Head on collision	95(22.42)
Sideways	269(63.59)
Others	59(13.94)
Type of vehicles	
Bicycles	18(4.25)
Two wheelers	11426.95
Light motor vehicle	182(43.02)
Heavy motor vehicle	83(19.62)
Others	26(6.14)
Type of injury	
Blunt	60(14.18)
Fracture	279(65.95)
Lacerated	4(0.95)
Multiple	80(18.91)
Site of injury	
Upper extremities	57(13.47)
Lower extremities	192(45.39)
Head, neck and face	60(14.18)
Multiple	114(26.96)
Outcome	
Fatal accidents	22(5.2)
Non fatal accidents	401(84.8)

productive age group with male to female ratio of 6:1. Similar finding of predominance of young and productive age group was reported by Badrinarayan Mishra et al[4] in west Nepal and Manna N et al[5] in a tertiary care hospital in Kolkata, Nilambar Jha et al[6] from south India and Abhishek Singh et al in a tertiary care hospital in rural Haryana.[7] In the present study the male to female ratio of RTA was 6:1. Similar findings were reported by Badrinarayan Mishra et al with a male to female ratio of 5.6:1. In contrast male to female ratio of 8.3:1 was reported by Manna N et al. In the present study more than one third of the accidents took place between 6pm to 12 mid night. Similar finding were reported by other observers. [6, 7, 8, 9] In the present study about 63% of the accidents were sideways collision. Similar finding was reported by Maj S.M. Pathak et al[10] with 64.76% of accidents of sideways collision and Gunjan et al[11] where sideways collision was found to be 63.59 percent. In our study in 43% of RTA light motor vehicles were involved. Similar finding of 41.5% Motorized two-wheelers occupants met with RTA as reported by Abhishek Singh et al[7] but in contrast, Khare Neeraj et al[12] and Maj S.M. Pathak et al[10] reported that in two third of RTA Motorized two-wheelers were involved. In the present study lower extremities was the most common site of injury. Similar findings were observed by Manna N et al, Tiwary RR et al and Patil SS et al[2,13.14], in contrast Khare Neeraj et al[12] reported head injury(59.3%) and Biswas et al head and neck injury (56.4%) as the most common site of RTA. Abhishek Singh et al reported that the maximum numbers of injuries were seen in the abdomen and the least in the upper limb.[7] In the present study the case fatality was 5.2%

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Khare Neeraj et al[12] reported 3.1% D. Sharma et al reported to be 1.65 percent in their studies.[17]

Conclusion

In conclusion in the present study about 90 % of RTA cases fall in the Age Group 18 – 59 years with a Male to Female Ratio of 6:1. Most of the Accidents occurred between 18.01to 24.00 i.e. later half of the day to midnight. Sideways Collision of Two Wheelers and Light Motor Vehicles is the most common type seen. Fracture of Bones in the Lower Extremity is the commonest injury encountered. About 5.2% of RTA cases are fatal. There is a widespread belief that accidents are inevitable; this fatalistic attitude must be curbed. Safety education must begin with school children. Young people need to be educated regarding Risk factors, Traffic rules and safety precautions. Ten minutes talk by the principal or other respected person of the school at the end of the morning assembly about the basic rules of behavior of living safely by the side of busy highways should be made compulsory part of curriculum. More over the key to successful prevention lies in the commitment of all Relevant Sectors, Public and Private - Health, Transport, Education, Finance, Police, Legislators, Manufacturers, Foundations, Communities, Individuals and the Media to make Road Safety Happen.

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Original Research Article

Nutritional Status of Adolescent Girls in Social Welfare Hostels: A Cross-Sectional Study

SusmithaK.M.[1] Jyothi.C[2]. Prabakaran J.[3]Ananthaiah Chetty N.[4]

Date of Submission: 19.01.2015 **Date of Acceptance: 14.02.2015**

Abstract

Background: Adolescence is a transition phase through which a child becomes an adult. It is characterized by rapid growth and development; physiologically, psychologically and socially. Adolescents are an "in between group", with some nutrition problem, some common with children and some with adults. **Objective:** To assess the Nutritional status of the adolescent girls residing in the Social welfare Hostel. **Material and Methods:** Study setting: Six social welfare hostels for scheduled caste girls in Nellore city. Study design: Descriptive cross sectional study. Study period: June 2008 –May 2009.Study population: All the girls aged between 11-19 years residing in the social welfare hostels of Nellore city. Sample size: 562 adolescent girls were registered at the time of study in social welfare hostels out of which 542 are recruited in this study. Study instruments: Pre-designed, pre-tested, semi-structured questionnaire, Weighing machine, stadiometer etc. Study methodology: Written permission was obtained from the Deputy Director of social welfare hostels of Nellore district. Nutritional Status: Assessed by Anthropometric measurements viz height, weight, BMI. ,biochemical markers viz haemoglobin estimation. Analysis: SPSS Version 17.0. Chi-square test was used for analysis of categorical variables. **Results:** The prevalence of thinness in the study subjects was 57.56%. 64.6% were underweight, A 20% sub-sample of 542 subjects i.e. 135 subjects were examined for Haemoglobin estimation. 49.6% were found to be anaemic. **Conclusion:** the different nutritional status indicators revealed that a large proportion of adolescents were undernourished with stunting, energy deficient and/or anemic.

Key Words: Adolescent, Nutritional status, Social welfare hostels, Stunting, Anemia

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Introduction

WHO defines adolescence as the segment of life between the ages of 10-19 years. Adolescence is a transition phase through which a child becomes an adult. It is characterized by rapid growth and development; physiologically, psychologically and socially.[1]

About one-fifth of India's population is in the adolescent age group of 10–19 years.

Adolescents are an "in between group", with some nutrition problem, some common with children and some with adults. The newer focus on RCH also has been invigorated by the continuing realization of the importance of women's health; it is now widely accepted that if the health of women is to be improved, the health of adolescents must be given high priority in Indian policy and programme development and implementation.[2]

Anaemia is a widely prevalent health problem among adolescent girls. Both the 1992 ICMR study on Iron and Folic Acid supplementation and UNICEF have reported low mean hemoglobin levels and low nutritional intake of proteins, calories, and macro/micronutrients among adolescent girls and pregnant mothers.Poor physical growth and stunting are the primary outcomes of poor nutrition. The NFHS-3 (2005-2006) reported that the prevalence of anaemia was 56% among adolescents .[3]

In Andhra Pradesh, this segment constitutes approximately 5.03% of the population. The importance of this target group lies in the fact that they are going to be the mothers of tomorrow – whose wellbeing is critically important for improving the nutritional, health and educational status of women in the State. Various base line surveys also revealed that the healths, nutritional and educational status of adolescent girls are at sub-optimal level[4].

The girls stay more than 8 years in these hostels. As these girls have come out of their environment and are living in groups, they face special risks and need extra care for the maintenance and improvement of their health and nutrition. The data regarding the nutritional status in the social welfare hostels for the scheduled castes are sparse, despite the usefulness of such information in the management of hostels and upliftment of these groups.[5] In this context, the present study was taken up among adolescent girls residing in the social welfare hostels for scheduled castes in Nellore city. This study focuses on the nutritional status of adolescent girls in the hostels.

Objective: To assess the Nutritional status of the adolescent girls residing in the social welfare Hostel.

Material and Methods

Study setting: Social welfare hostels for scheduled caste girls in Nellore city.

Study design: Descriptive cross sectional study.

Study period: June 2008 –May 2009.

Study population: All the girls aged between 11-19 years residing in the social welfare hostels of Nellore city.

Inclusion criteria: 1.All adolescent girls aged 11-19 years. 2. A minimum of not less than one year stay in the hostel.

Exclusion criteria: Absentees and drop outs of the subjects from the hostel during the period of survey.

Sample size: 562 adolescent girls were registered at the time of study in social welfare hostels out of which 542 are recruited in this study.

Study instruments: Pre-designed, pre-tested, semi-structured questionnaire, Weighing machine, stadiometer etc.

Study methodology: The study was conducted among adolescent girls residing in six social welfare hostels for scheduled caste students in Nellore. Written permission was obtained from the Deputy Director of social welfare hostels of Nellore district.

Nutritional Status Measurement: Nutritional status of girls was assessed by: Anthropometric measurements viz height, weight, BMI. and Biochemical markers viz haemoglobin estimation.

Anthropometry[6] Measurement: Height- Stadiometer (measuring rod) capable of measuring to an accuracy of 0.1 cm was used to assess height of the subjects. **Weight**- A portable weighing machine with an accuracy of 100gm was used to record the weight of the girls.

Body Mass Index (BMI) – BMI was calculated using the formula Weight in kg/height in m^2. The subjects were categorized into four groups based on BMI according to WHO Asian Pacific[7] standards

Thinness- WHO defines thinness in adolescents as BMI below the 5th centile for age.[8] In this study, 5th percentile of NCHS standards of BMI for age were considered as thin.

Wasting - Height for age less than 3rd percentile of NCHS/WHO standards.[9] In this study, 5th percentile of NCHS standards of height for age were considered as stunted or wasted.

Laboratory Tests: Haemoglobin estimation was done by Sahli's method on a 20% subsample of subjects, drawn by systemic random sampling. The WHO cut off levels were taken as standards to classify the haemoglobin status.

Analysis: Data collected was entered in Microsoft Office Excel and analysed by using SPSS Version 17.0. Proportions were calculated for different study variables. Chi-square test was used for analysis of categorical variables. Criteria of significance used in the study was $p < 0.05$.

Results

On the whole 35.79% were in middle school, 56.08% were in high school, 8.11%were in college education.

The median weight of the girl ranged from 30 ± 4.69 Kg to 45.5 ± 2.10 Kg. The median weight increased as the age increased. When compared to 50th percentile of NCHS standards the mean

weights of girls in the present study were very low (p= 0.002).

Figure1: Line chart showing Weight for Age

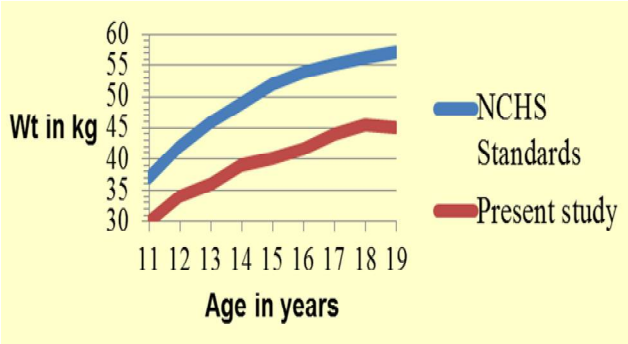
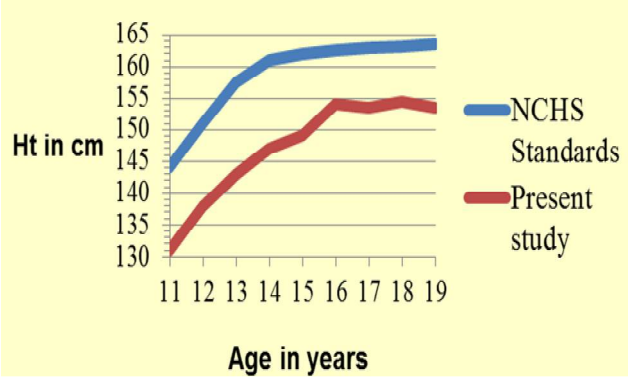


Figure2: Line chart showing Height for Age



The median height of the girls ranged from 131 ± 6.24 cm to 154.50 ± 4.06cm. When compared to 50th percentile of NCHS the median height of girls in the present study were very low (p=0.005).

Stunting was highest 14.7% in 14-15 year age group, followed by 13.3% in 16-19 years and 8.8% in 11-13 year age group. (p>0.05) The prevalence of thinness in the study subjects was 57.56%. Thinness was highest in the age group of 14-15 year i.e., 46.7%, followed by 50.8 % in 11-13 years and 46.7% in 16 – 19 year age group (p>0.05).

Figure3: Bar diagram showing Prevalence of Thinning and Stunting

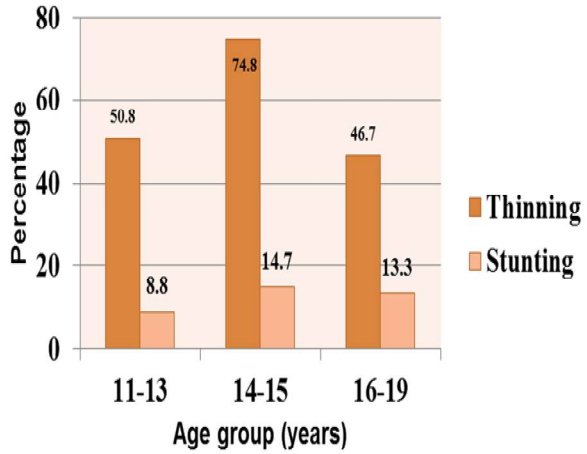
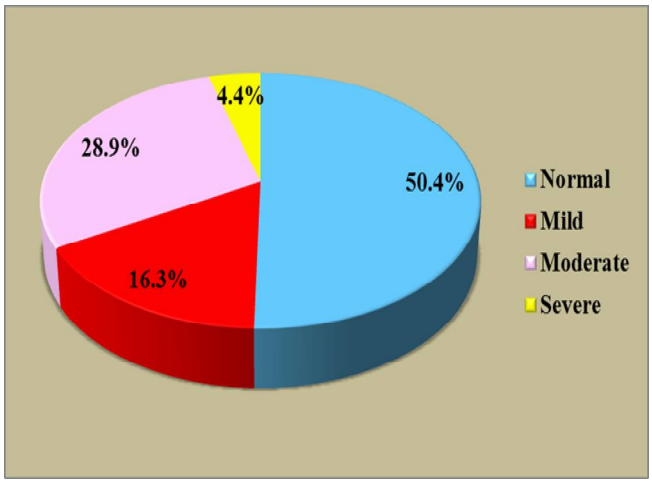


Table 1: Distribution of study subjects according to BMI staging (n=542)

BMI staging		Frequency	Percentage
1	<18.5(under weight)	350	64.6
2	18.5-22.99(normal)	188	34. 7
3	23-24.99(pre-obese)	2	0.4
4	>25(obese)	2	0.4
	Total	542	100

According to WHO BMI staging 64.6% were underweight, 0.4% were pre-obese and 0.4% were obese.The mean haemoglobin of the girls ranged from 10.22±0.5 to 12.6±0.11 gm/dl. The mean haemoglobin level was highest in 18 year age group.

Figure5: Pie diagram showing Grading of Haemoglobin



A 20% sub-sample of 542 subjects i.e. 135 subjects were examined for Haemoglobin estimation. 49.6% were found to be anaemic.

Table 2: Duration of stay of study subjects in the hostel and Anaemia (n=135)

Period of stay (years)	Anaemia		Total (%)
	Present (%)	Absent (%)	
<5	40(52)	37(48)	77(100)
>5	27(46.55)	31(53.45)	58(100)
Total	67(49.63)	68(50.37)	135(100)

(χ^2=0.2,df = 1, p = 0.65)

Out of 77 girls who stayed less than five years in the hostel, anaemia was present in 52% where as in those who stayed more than five years anaemia was present in 46.55% and this was found to be statistically insignificant. (χ^2=0.2,df = 1, p = 0.65)

Discussion

In the present study, the median weight of subjects ranged from 30 ± 4.69kg to 45.5 ± 2.1kg and the median height ranged from 131 ± 6.24cm to 154.5 ± 4.06cm. These are very low when compared to NCHS standards.[10]

In the study conducted by Srinivasan[4]the mean weights and heights of both boys and girls were below NCHS standards, reason being both the studies were conducted in social welfare hostels. In a study by Varsha Zanvar et al.[11] of Marathwada region, weight, height and BMI were below the NCHS standards. In a study by Banerjee[12] in school children, the height and weight were below NCHS (50th percentile) and Indian (50th percentile) standards, 31.7% were under weight and 7.02% were of short stature when compared to 5th and 3rd percentiles of NCHS. In the present study 46.7% are having thinness and 13.3% are stunted. This high prevalence of thinness and stunting may be due to inadequate food intake.

In the study conducted by Srinivasan[5] in Tirupati, prevalence of malnutrition was 78.4%.This high value may be due to lower age group. Chabbra[13] et al. noted 36.7% of malnutrition in children of an observation home in Delhi.

In the study by Deshmukh[14] thinness was higher in early adolescence (57%) than in late adolescence (48.5%) whereas in this study thinness is highly prevalent in mid adolescence (74.8%) than in early adolescence (50.8%). This

may be due to growth spurt. In a study conducted by Dilip kumar das[15] in West Bengal were 37.8% stunted and 14.7% were thin.

In another study by Medhi et al.[16] 52% of girls were stunted and 41% were thin when compared to NHANES standards.Studies by Raheena Begum[17] in Thiruvanathapuram reported heights and weights less than NCHS standards, whereas Singh et al.[18] in Lucknow in his study reported less than ICMR standards.In a study by Patil[19] in Maharashtra according to WHO Asian Pacific BMI criteria, 67.8% were under weight.

In the present study according to WHO BMI staging 64.6% were having chronic energy deficiency (CED), 34.7% were normal, 0.4% obese and 0.4% preobese. In a study by Kapil et al.[20] 8.1% were CED grade I, 6.65 were CED grade II and 78.8% were CED grade III.In a study by Raheena Begum[17] in Kerala, 53% in 14 years age group and 33% in 15 years age group were having BMI <18.5.In a study by Medhi et al.[16] in adolescents of tea garden workers, median BMI was far below NCHS median and overweight was detected in only two adolescents (0.33%) which is similar to the present study.

In a study by Deshmukh et al.[14], CED was found to be 75.3%. This high prevalence of CED in other studies when compared to present study may be due to fact that they are conducted in communities and most of them have included both boys and girls.In the present study 49% of girls suffered from anaemia, 16.3% from mild, 29% from moderate, 4.4% from severe anaemia. The mean haemoglobin ranges from 10.22 to 12.6g/dl. Similar prevalence of anaemia was noted in studies by Dilip kumar et al.[15] (44.8%), Varsha Zanvar[9] (46.6%), Aneja et al.[21] (47%), Singh et al.[18] (56%) and Patel[19] in Maharashtra (42%).

High prevalence of anaemia was found in studies by Srinivasan[5] (80.4%), Chaturvedi et al.[20] (73.7%), Pooja Trivedi[22] (82%) and Satapathy et al. [23] (72.7%). This high prevalence when compared to present study may be due to inadequate iron intake and relatively high incidence of worm infestation.

The median weight and height of the girls were very low when compared to 50th percentile of NCHS standards. Stunting was highest (14.7%) in 14-15 year age group. The prevalence of thinness was 57.56%. 64.6% were underweight.The mean haemoglobin of the girls ranged from 10.22±0.5 to 12.6±0.11 gm/dl, 49.6% were found to be anaemic. The different nutritional status indicators revealed that a large proportion of adolescents were undernourished with stunting, energy deficient and/or anemic.

Considering the results of this study, it is suggested that a comprehensive strategy should be implemented in disadvantaged groups in order to prevent adolescent girl undernourishment. In view of the high prevalence of anaemia, Iron and Folate supplementation and Deworming must be done periodically.Haemoglobin estimation of inmates and facilities for treatment on the spot at school

health clinic and referral services should be organized and monitored systematically.

Acknowledgment: Authors are grateful to all the study subjects, social welfare authorities, teachers & students involved in the study for their cooperation.

Conflict of Interest: Nil

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Original Research Article

A study of utilization of Janani Suraksha Yojana (JSY) scheme , among beneficiaries in a rural area of Punjab

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Abstract

Introduction: Reduction of mortality of women is an area of concern for the Governments across the globe. Ensuring that women receive skilled care at delivery is an essential part of safe motherhood programs. JSY, a safe motherhood intervention was introduced to promote institutional delivery among the poor pregnant women. The present study was planned to assess the knowledge of JSY & also to explore the utilization pattern of JSY scheme among eligible women. **Methods**: A community based cross-sectional study was conducted in the field practice area of R.H.C. (Rural health centre) under Department of Community Medicine of SGRDIMSAR, Amritsar. The study was conducted during January – June in the year 2014. A list of JSY beneficiaries was obtained from the Gram Panchyat. A total of 192 women eligible for JSY were contacted. Seven beneficiaries did not give consent. Information was collected by the interviewer on pre-designed & pre - tested questionnaire. Analysis was done using SPSS 18.0 version. **Results**: The study revealed that out of 185 eligible JSY beneficiaries majority (88.7%) were in the age group of 20-30 years. Education profile of the beneficiaries revealed that 37.3% were illiterates, 32.4% were below matric & 30.3% were above matric. Out of total eligible beneficiaries, 76.2% had heard about JSY scheme & 23.8% hadn't heard about the scheme. Registration was done in 87% of all the eligible beneficiaries. Out of the total beneficiaries, 76.2% delivered in hospital & 23.8% delivered at home. Less than half (48.2%) of the beneficiaries, received the benefit of the JSY scheme. **Conclusions**: Home deliveries still occur in Punjab. State needs to reach the unreached and motivate all poorest of the poor women for institutional delivery by proper campaigning, removing their fears regarding hospital setting and staff, making alternative arrangement for transport and making due payments on time to the beneficiaries.

Key words – JSY, Beneficiaries, Rural, Punjab

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Introduction

Around the world, people celebrate the birth of a new baby. Societies expect women to bear children, and honour women for their role as mothers. Yet in most of the world, pregnancy and childbirth is a perilous journey .In less developed countries, more than half a million mothers die each year from causes related to this life-giving event(1). Reduction of mortality

of women is an area of concern for the Governments across the globe. The International Conference on Population and Development in1994 had recommended reduction in maternal mortality by at least 50 percent of the 1990 levels by the year 2000 and further one half by the year 2015(2). The maternal mortality ratio in developing countries in 2013 was 230 per 100, 000 live births versus 16 per 100 000 live births in developed countries. About 800 women die from pregnancy- or childbirth-related complications around the world every day. In 2013, 289 000 women died during and following pregnancy and childbirth. Almost all of these deaths occurred in low-resource settings, and most could have been prevented (3).

Motherhood can be safer for all women .Women's lives can be saved and their suffering reduced if health systems could address serious and life-threatening complications of pregnancy and childbirth when they occur. One of the best ways to do this is to make sure that women receive skilled care at delivery. Ensuring that women receive skilled care at delivery is an essential part of safe motherhood programs (1).

JSY, a safe motherhood intervention was introduced by making some changes in NMBS to reduce Infant Mortality Rate (IMR) and Maternal Mortality Rate (MMR) by promoting institutional delivery among the poor pregnant women (4). The Janani SurakshaYojana (JSY) program, which is both a demand- and supply-side P4P program, provides payments to individual community health workers and to women seeking a continuum of maternal and new-born health services. ASHAs serve as liaisons between the community's health needs and the government health system and play a critical role in the JSY program .The program provides a continuum of care package that includes antenatal care (ANC), institutional delivery , postpartum care, and family planning, coordinated by the ASHA(5).

JSY was started by Govt. of India from 12-04-2005 in rural areas and from 01-04-2006 this geographic inequality had been removed by including Below Poverty Line (BPL) ladies of urban areas also. From 31-10-2006 JSY benefits has been extended to SC/ST pregnant women irrespective of BPL card. There is cash incentive of Rs. 500/- to all BPL/SC/ST women above 19years of age, up to two living children irrespective of sex of the child at the time of home delivery and additional Rs. 200/- and Rs. 100/- for institutional delivery to Rural (Total Rs.700/-) and Urban (Total Rs. 600/-) pregnant women respectively for delivering in a government or private accredited Institution (4).

Births attended by skilled health personnel have increased; however, disparities in progress within countries and populations groups persist**.** In 1990, just 44 per cent of deliveries in rural areas and75 per cent in urban areas of developing countries were attended by skilled personnel. By 2011, coverage by skilled birth attendants increased to53 per cent for rural births and 84 per cent of urban births. Globally,

47 million babies were delivered without skilled care in 2011(6).

Demand–side financing programmes, particularly cash transfer programmes, have emerged recently as newer ways of addressing the chronic problem of underutilisation of health and social services, particularly among vulnerable groups. Few attempts have been made to assess the utilization of JSY scheme among beneficiaries in Punjab. So the present study was planned to assess the knowledge of JSY & also to explore the utilization pattern of JSY scheme among eligible women.

Material and Methods

A community based cross-sectional study was conducted in the field practice area of R.H.C. (Rural health centre) under Department of Community Medicine of SGRDIMSAR, Amritsar. The total population covered by RHC in year 2013 was 25,796. Total deliveries recorded were 416. The study was conducted during January – June in the year 2014. A list of JSY beneficiaries was obtained from the Gram Panchayat. For speedy implementation of scheme Gram Panchayat (GP)/ has been declared nodal agency for attestation of BPL status of family wherever yellow card are not available by state of Punjab (4).

All the beneficiaries chosen from the prepared list were contacted. After obtaining informed consent & verbal explanation for the purpose of study, actual study was conducted. Pre- designed questionnaire, which was pre-tested, was used for the collection of information. A total of 192 women eligible for JSY were contacted. Seven beneficiaries did not give consent. Information was collected by the interviewer on various parameters like age at marriage, age at first pregnancy, education status, no. of living children, components of antenatal care, place of delivery, whether benefit of JSY received. Documents related to antenatal care & JSY was cross checked wherever possible. Analysis was done using SPSS 18.0 version.

Results

The study revealed that out of 185 eligible JSY beneficiaries majority (88.7%) were in the age group of 20-30 years. Most of the beneficiaries (78.4%) belonged to SC category while 10.3% belonged to the general category. Education profile of the beneficiaries revealed that 37.3% were illiterates, 32.4% were below matric & 30.3% were above matric (Table 1). Majority were housewives (95.7%) & only 4.3% were doing work outside home.

Maximum (90%) of the study subjects belonged to B.P.L. families. The study revealed that maximum beneficiaries (72.4%) had borne their first child in the age group of 20-25 years while 16.8% had their first child below 20 years. At the time of study 38.9% had one living child while 43.2% had 2 living children &17.9% had 3 or more than 3 living children. Out of the total beneficiaries 40.5% gave birth to male child & 59.5% gave birth to females.

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Table 1 - Profile of JSY beneficiaries

Particulars	Groups	Frequency	%
Age	15-20	01	0.5
	20-25	83	44.9
	25-30	81	43.8
	30-35	18	9.7
	35-40	02	1.1
Religion	Sikh	124	67
	Hindu	59	31.9
	Others	01	1.0
Education	Illiterate	69	37.3
	Below matric	60	32.4
	Matric & above	56	30.3
Caste	General	19	10.3
	SC/ST	145	78.4
	OBC	03	1.6
	Others	18	9.7
Place of present delivery	Hospital	141	76.2
	Home	44	23.8

More than half of husbands (55.1%) of beneficiaries were in the age group of 25-30 years. Education status of husband revealed that one third of the subjects (34.1%) were illiterates while 21.1% were below matric & 44.9% were educated upto matric and above. Majority of husbands were labourers, 25.4% were doing private service, 4.3% were shopkeepers & only 6.5% were engaged in farming.

Out of total eligible beneficiaries, 76.2% had heard about JSY scheme & 23.8% hadn't heard about the scheme. Less than half (45.4%) of subjects had heard about JSY scheme from health worker while 24.3% subjects had heard about the scheme from relative, 5.4% from neighbours & 1.1% from friend. Almost one third of beneficiaries (30.2%) had heard about the scheme before pregnancy, 39.5% during pregnancy & 6.5% after delivery.

Registration was done in 87% of all the eligible beneficiaries. Out of registered pregnancies more than half (54.6%) got the registration done in 2ndtrimester, 24.3% in 1st trimester & 8.1% in 3rd trimester. Beneficiaries got their pregnancies registered by ASHA (37.3%), ANM (31.9%), AWW (10.8%) & 7% by others. ASHA paid a home visit to 50.2% of the respondents. ASHA helped 43.8% beneficiaries in getting registration done.

More than half (55.7%) of beneficiaries had 4 or more than 4 ANC visits, 32.4% had less than 4 visits & 11.9% had no ANC visits. Antenatal services were received by 58.9 % beneficiaries in government dispensaries, 22.2% in private hospitals & 5.9% in government hospitals.

More than one third of the beneficiaries (36.2%) consumed 100 tablets while 48.1% of the registered beneficiaries consumed less than 100 tablets & intake was irregular. No intake of iron folic acid tablets was observed in 15.7% of subjects. Education had a statistically significant relation with ANC check up & consumption of iron folic acid tablets (Table 2).

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Table 2 Relation of Education With Components Of ANC

Components of ANC		Education		
		Illiterate	Below Matric	Matric and above
No. of antenatal visits	No visit	15	4	3
	4 or > 4 visits	36	31	36
	<4 visits	18	25	17
Chi-square=14.60, df= 4, p=.006				
Consumption of Iron folic acid tablets	No intake	22	4	3
	100 tablets	19	25	23
	Irregular intake	28	31	30
Chi-square=22.08, df= 4, p=.000				
Time of TT injection	Time of TT injection			
	No vaccine	12	4	9
	After 16 weeks	39	41	35
	Before 16 weeks	18	15	12
Chi-square=4.13, df= 4, p=.388				

Table 3 Relation of place of delivery with various socio-demographic factors

Socio-demographic factors		Place of delivery	
		Hospital	Home
Education of beneficiary	Illiterate	37	32
	Below matric	52	08
	Matric and above	52	04
Chi square=31.60, df=2, p=0.000			
No. of living children	One	66	6
	Two	59	21
	Three	15	14
	>three	1	3
Chi square=25.135, df=3, p=0.000			
Age at first pregnancy	15-20	20	11
	25	102	32
	25-30	19	1
Chi square=6.23, df=2, p=0.044			
Education of husband	Illiterate	35	28
	Below matric	32	7
	Matric and above	74	9
Chi square=23.23, df=2, p=0.000			

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Injection TT was administered in all of the registered beneficiaries. More than half beneficiaries (62.7%) received injection TT after 16 weeks. ASHA provided help in getting the injection in 35.7% of beneficiaries.

Out of the total beneficiaries, 76.2% delivered in hospital & 23.8% delivered at home. Of the total institutional deliveries, 50.3% delivered in government hospitals, 23.2% in private hospital of their choice & 2.7% by private hospital suggested by health worker. Delivery was conducted by Doctors in 40% cases & by nurses in 36.2% cases in case of hospital delivery. As reported, nurses are also conducting normal deliveries in hospitals.

As regards awareness of free ambulance service facility provided by government, 53% were aware about this service. But for reaching hospital only 14.1% availed this facility while 36.7% used four-wheeler & 25.4% used two-wheeler to reach hospital. ASHA accompanied only 14.1 % of beneficiaries to the hospital at the time of delivery.

Caesarean section was conducted in 31.9% subjects & 44.3% had normal deliveries. Maximum subjects 44.3% had more than 3 days stay in hospital, 26.5% stayed for one day in hospital & 5.4% had a stay of 2 days in hospital. The reasons cited for hospital delivery were availability of money under JSY (14.6%), access to institutional delivery (17.8%), as advised by health workers (13.5%) & as advised by elders (20%).

Out of the total eligible beneficiaries, 23.8% delivered at home. Majority of the deliveries were conducted by Dais (13.5%) followed by nurses (8.6%) &1.7% by relatives. The various reasons cited for home delivery were previous delivery at home (13.5%), as advised by elders (3.8%), were interested during antenatal period but delivered at home (4.3%), hospital was located at distance (1.6%) and lack of vehicle (0.5%).

Out of total beneficiaries who had more than one living child, previous pregnancy record revealed that 22.2% had hospital deliveries & 38.9% had home deliveries. Out of these hospital deliveries, 15.2% deliveries were conducted in the government institute & 7% in private hospitals.

Majority of the subjects (83.2%) spent more than Rupees 500 on delivery followed by 12.4% who spent less than Rs. 500 on delivery while only 4.3% did not spend any money on delivery. As regards monetary benefit associated with JSY, 60.5% were aware about the benefit.

Less than half (48.2%) of the beneficiaries, received the benefit of the JSY scheme. Out of this 36.8% received it by cheque & 11.4% by cash. Benefit was received on the same day in 4.3% beneficiaries only. 23.8% received the benefit in less than one week, 10.8% in more than one week & 1.6% in more than 6 months & 7.6% had not received the benefit till date. Only 7 % beneficiaries got the benefit in one visit while 19.5% paid more than one visit to get the benefit & 21.6% paid more than 2 visits to

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receive the benefit. One-fifth (24.3%) of the beneficiaries received more than Rs. 1500/-, and 6.5% received less than Rs. 1000/- as benefit. While in case of home deliveries only 7.2 % received the amount. ASHA paid post natal visits once in 38.6 % subjects & twice in 9.5% subjects. All the beneficiaries were not aware about celebration of village health & nutrition day.

Discussion

The study was a cross sectional study conducted in rural field practice area of Department of Community Medicine, SGRDIMSAR, Amritsar. The study revealed that majority of beneficiaries belonged to BPL families. Maximum were in the age group of 20-30 years and were mainly housewives. More than one third of them were illiterates.

The profile of husband's education revealed that maximum were labourers & only 6.5% were doing some agricultural work. Education profile revealed that 44.5% were educated till matric and above which better when compared with females (30.3%).

Awareness levels regarding the JSY scheme among the eligible beneficiaries were on the higher side (76.2%). Similar findings were observed in another study done among women eligible for JSY benefits in West Bengal, where 64% mothers had heard the name of JSY (7). Whereas concurrent evaluation of NRHM (2009) Punjab revealed that the awareness about Janani Suraksha Yojana (JSY) was found to be low & among women, 20 % were aware of the JSY Scheme (8). This difference could be because with time awareness levels have improved.

Less than half of beneficiaries had heard about JSY scheme from health worker. Maximum beneficiaries (39.5%) had heard about the scheme during pregnancy. Registration of current pregnancy was done in 87% beneficiaries. Punjab boasted higher rates of antenatal care, with 83 percent of women receiving any antenatal check-up as per DLHS-3(9). Similar observations were made in a study done in slum community of Dehradun, where majority (78.42%) of the women were registered with some health personals (10).

Half of the subjects got the registration done in 2nd trimester & one quarter got them registered in 1st trimester. ASHA helped 43.8% beneficiaries in getting their registration.

More number of beneficiaries visited government dispensaries (58.9%) than government hospitals (5.9%) for antenatal visits and 22.2% visited private hospitals. More than half (55.7%) of the subjects had 4 ANC visits, 32.4% had less than 4 ANC visits & 11.9% had no visits. It was observed that education had a statistically significant (.006) relation with ANC visits.

Consumption of complete 100 iron folic acid tablets was observed in 36.2% of the beneficiaries whereas irregular intake was observed in 48.1% of the subjects. No intake was observed in 15.7% of the subjects.

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Consumption of iron folic acid tablets was observed to increase with increase in educational status of beneficiaries. The difference was found to be statistically significant (p<.0001).

Hospital deliveries were observed in maximum beneficiaries (76.2%) whereas home deliveries were seen in 23.8% study subjects. Similar observation was made in Punjab health report where institutional delivery rate had continued to increase and was reported at 63 percent in DLHS-3 (9). Half of the institutional deliveries occurred in government hospitals while 23.2% deliveries occurred in private hospitals of their choice & only 2.7% in private hospital suggested by health worker. Individuals in Punjab, whether living in urban or rural areas, suffering from short or long-term illnesses, or of any income level, visit private healthcare facilities between 80 percent and 95 percent of the time (9).

Delivery was conducted by both doctors (40%) & nurses (36.2%). 44.3% beneficiaries had normal deliveries while 31.9% had caesarean section. Almost half of the beneficiaries stayed in hospital for more than 2 days whereas 26.5% had a 1 day hospital stay. Availability of money accounted for JSY was found to be the reason for institutional delivery in 14.6% cases. In another study done among JSY beneficiaries in Jabalpur, monitory benefit was the main motivating factor for institutional delivery for one third of the respondents (11). Other reasons cited were as advised by elders (20%), access to institutional delivery (17.8%), advised by health workers (13.5%).

Half of the subjects were aware of availability of free ambulance service but only 14.1% availed this facility. Other beneficiaries used either four wheeler (36.8%) or two wheeler (25.4%) to reach hospital. ASHA accompanied 14.1% of beneficiaries to hospital. Whereas one third of the beneficiaries female were accompanied by the motivator i.e. ASHA /ANM for institutional delivery in a study conducted among JSY beneficiaries in Jabalpur (11).

Of the total beneficiaries, 23.8% delivered at home. Home deliveries were conducted by Dais (13.5%), followed by Nurses (8.6%) and 1.7% by relatives .The main reason for home delivery cited was previous delivery at home (13.5%). Other reasons given were as advised by elders (3.8%), location of hospital at a distance (1.6%), lack of vehicle (0.5%). 4.3% of the beneficiaries who delivered at home were interested in hospital delivery during antenatal period.

It was observed that among the beneficiaries with more than one living child, more home deliveries (38.9%) occurred than hospital deliveries (22.2%) in case of previous pregnancies. Of these hospital deliveries, 15.2% were conducted in government institutes & 7 % in private hospitals.

It was revealed that 60.5% were aware of the monetary benefit associated with JSY scheme. Less than half (48.2%) of the beneficiaries

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received the amount of benefit. Similar observation were made in a study conducted in slum population of Solapur, Western Maharashtra in which out of 360 only 32.78% women got the benefit of JSY while 67.22% missed the opportunity of getting JSY benefit(12). Of these most of the beneficiaries (36.8%) received the amount by cheque. Benefit was received the same day in 4.3% of the beneficiaries & 7.6% had not received the benefit till date. In 23.8% beneficiaries benefit was received within 1 week, in 12.4% it was received within 6 months of delivery of the beneficiaries, 7% got the benefit on same day. 19.5% of the beneficiaries visited once to avail the benefit, 21.6% visited more than two times to receive the benefit. Amount received by the beneficiaries varied. It was revealed that 24.3% beneficiaries received amount of Rs. 1700/- and 6.5 % received less than Rs. 1000/- as benefit. The reason could be because the Government of Punjab has gone beyond the provisions of NRHM for maternal and child health by introducing the MKKS (Mata Kaushalya Kalyan Scheme). As a State initiative, the State of Punjab is giving a cash incentive of Rs. 1000/- to each pregnant woman for delivering in a Government Health Institution (13). It was observed that less number of post natal visits was conducted by ASHA.

Conclusions

Punjab was not one of the high-focus states due to its relative wealth and high rates of institutional deliveries. Because Punjab was not identified as a high-focus state, JSY was not rolled out as strongly in the state. This is evident from JSY participation rates as reported in DLHS-3: only 2.7 percent of women in Punjab received financial assistance from JSY, compared to a national average of 13.3 percent. Home deliveries still occur in Punjab. State needs to reach the unreached and motivate all poorest of the poor women for institutional delivery by proper campaigning, removing their fears regarding hospital setting and staff, making alternative arrangement for transport and making due payments on time to the beneficiaries. Though deliveries occur in government institutes but still people get their deliveries done in private sector. Private medical care is the chief health service provider in Punjab and covers 90 percent cases of non-hospitalized care and over two-thirds of the cases of hospitalized despite high costs, even very poor consumers are turning to private health service providers.

The fund flow mechanism should be streamlined and immediate compensation to the beneficiary should be given after the delivery. There was no conscious effort for disseminating messages during Village Health and Nutrition Day. IEC activities must be strengthened for developing effective messages by using the Janmancha, banners and slogans, and putting up an effective communication strategy. Though a good deal of effort was made at different levels, there still exists certain gaps in the level of

awareness which needs to be addressed appropriately.

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CONFLICT OF INTEREST - Nil

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Original Research Article

Leprosy: A study from Western Uttar Pradesh

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Abstract

Introduction: Leprosy, also known as Hansen's disease, is a chronic, granulomatous, infectious disease that primarily affects the skin and the peripheral nerves. India contributes about 80% of the global leprosy case load and every year approximately four lakh new cases of leprosy are detected in India. The present study was carried out to know the clinical profile of newly diagnosed leprosy patients in a tertiary centre in Western Uttar Pradesh. **Material and methods:** Design: Hospital based observational prospective study. Setting: Dermatology Out Patient Department. Study unit: All newly diagnosed cases of leprosy who presented in the Out Patient Department from December 2013 to August 2014. Study instruments: Pre-structured questionnaire, clinical examination and slit skin smear examination. Statistical analysis: Data analysed with SPSS 19.0. **Results:** A total of 64 cases were studied, of which 44 (68.7%) were males and 20 (31.2 %) were females. 12 (18.8%) showed a positive family/contact history. Deformity was noted in 19 (29.9%) of patients with lepromatous leprosy patients having maximium deformity. Overall 9 (14.1%) of patients had lepra reaction at the time of presentation. The Borderline Tuberculoid type was the most common presentation. **Conclusions:** Finding new cases of leprosy is not rare. Clinical findings and skin smear examination are required for early diagnosis and adequate treatment to make the patient of leprosy non-infectious. Early diagnosis and adequate treatment of cases with multi drug therapy, before nerve damage has occurred, is the most effective strategy for containment of disease.

Keywords: Hansen's disease, prospective, paucibacillary, slit skin smear, lepra reaction.

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Introduction

Leprosy, also known as Hansen's disease, is a chronic, granulomatous, infectious disease that primarily affects the skin and the peripheral nerves. It is a spectral disease in which the clinical and pathological features reflect the cell-mediated immunity of the host. India contributes about 80% of the global leprosy case load and every year approximately four lakh new cases of leprosy are detected in India.[1] A total of 1.35 lakh new cases were detected

during the year 2012-13, which gives Annual New Case Detection Rate (ANCDR) of 10.78 per 100,000 population. There are still 49.92% of MB cases detected in 2012-2013. [2]

The principle of reducing the load of infection is the cornerstone of leprosy control programmes. Early diagnosis and prompt adequate drug treatment is very important aspect to reduce the load of leprosy. Diagnosis can be made in most cases accurately by clinical judgement and slit skin smear examination. But in few cases, diagnosis only on clinical basis is difficult. Confirmation of diagnosis in doubtful cases of leprosy is an important indication for histopathological examination. It is important to classify leprosy into paucibacillary (PB) and multibacillary (MB) and treat them adequately to reduce the chances of occurrence of resistant cases.

Three cardinal signs have remained the basis for the clinical diagnosis of leprosy: [3]

a) Anaesthetic/ hypoanesthetic skin lesion(s)
b) Thickened peripheral nerve(s) with impairment of sensations in the area supplied
c) Acid-fast bacilli in the skin smear.

Any one of these signs has been regarded as sufficient for the diagnosis of leprosy, so that the sensitivity is high. Each sign is also quite specific in itself so the specificity is also high. The present study was carried out to know the clinical profile of newly diagnosed leprosy patients in a tertiary centre in Western Uttar Pradesh.

Materials and Methods: The present study was an observational prospective study carried out in Out Patient Department (OPD) of Dermatology, Jawaharlal Nehru Medical College, Aligarh Muslim University, Aligarh from December 2013 to August 2014. All the newly diagnosed cases of leprosy who presented in the OPD were included in the study. The newly diagnosed untreated PB as well as MB cases were taken for the study.

A predesigned proforma was used for interviewing the patients after taking informed consent. Detailed history and thorough clinical examination was carried out in each patient.

Family/contact history was also noted. A family contact was defined as a person suffering from leprosy in the immediate family; like parents, siblings and grandparents and relatives living in the same house. The cases in the neighbourhood were defined as other than family contact. Information was collected regarding the disability present if any as per WHO disability grading system.[4] Presence of lepra reaction (whether type I or type II) was also noted.

Patients were diagnosed clinically on the basis of Indian association of Leprologists (IAL) consensus classification. [5] Slit skin smear examination was done for all patients at the time of diagnosis and skin biopsy was performed in six cases where confirmed diagnosis was not established. Patients were classified as PB and MB according to WHO guidelines[6] and treated with the respective regimens. Patients presenting with type I and type II lepra reaction

were treated adequately with oral steroids, thalidomide and NSAID's.

Results: A total of 64 patients were included in the study. Out of the 64 cases, 44 (68.7%) were males and 20 (31.2 %) were females. The age of the patients ranged from 6 years to 67 years. 3 (4.7 %) patients were in the paediatric age group. 12 (18.8%) showed a positive family/contact history [Table 1]. Deformity was noted in 19 (29.7%) of patients with lepromatous leprosy (LL) patients having maximum deformity. No deformity was noted in tuberculoid type of leprosy. Overall 9 (14.1%) of patients had lepra reaction at the time of presentation.

Maximum patients (43 out of 64) belonged to the borderline category. The Borderline Tuberculoid (BT) type was the most common presentation. LL was the second most common presentation followed by Borderline borderline (BB) group. The pure neuritic form was the least common presentation with 4 (6.3%) patients [Table 2].

Out of the 64 patients, 37 (57.8%) were treated with multibacillary multidrug therapy (MB-MDT) and the rest 27 (42.2%) patients were given paucibacillary multidrug therapy (PB-MDT) according to the WHO guidelines [Figure 1].

Discussion: The WHO classification [6] of dividing leprosy into PB (<5 lesions) and MB (≥5 lesions) is recommended for routine use and either Indian or Ridley-Jopling classification for research workers.[7] Pure neuritic leprosy has been recognized as a separate group in Indian classification of leprosy and its modified version. [1] Demonstration of acid-fast bacilli (AFB) in slit skin smears by Ziehl–Neelsen's staining also helps in diagnosis of leprosy. The study included 64 newly diagnosed cases of leprosy. The age of the patients ranged from 6 to 67 years. There was a male preponderance among the patients. A male:female ratio of 2.2:1 was observed in the study which is comparable with other Indian studies. [8-9]

Clinical spectrum of the disease showed maximum prevalence of Borderline group (BB, BL, BT). Similar predominance of cases in the borderline group was also observed by Thakkar and Patel[8] Sharma and Sharma[10] and Shenoi and Sidappa. [11]

Deformities were present in 19 (29.7%) of patients. Leprosy is associated with social stigma when it presents with deformities and disabilities of an affected person. One of the important measures to prevent such impairments is to diagnose the disease early and institute proper treatment promptly. So recent strategy has focused on new case detection with intense screening of deformities. [8,12]

Lepra reactions were seen in 9 (14.1%) patients. Type I lepra reaction was seen in BB, BT patients. Type II lepra reaction was seen in LL and BL patients. The patients with lepra reactions were managed with oral steroids, thalidomide, high dose of clofazimine, NSAID's and the usual dose of dapsone and rifampicin. Patients with deformities were

Table 1: Age and gender distribution of leprosy patients.

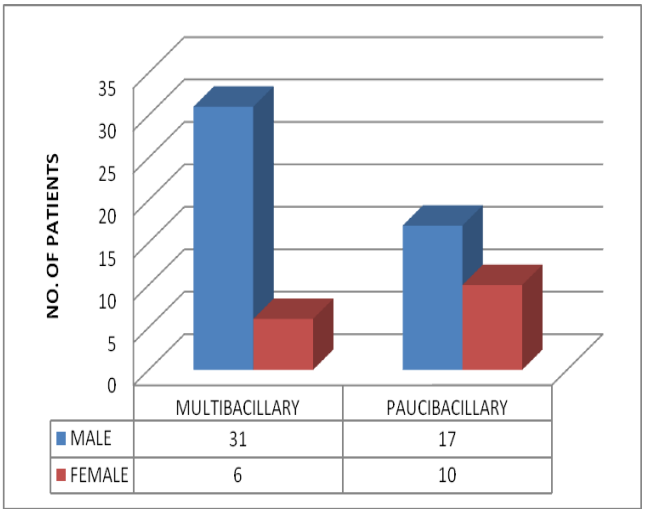
Age Group	Males	Females	Total
0-15	2(3.1)	1(1.6)	3
16-30	17(26.6)	7(10.9)	24
31-45	14(21.9)	8(12.5)	22
46-60	7(10.9)	3(4.7)	10
61-75	4(6.3)	1(1.6)	5
Total	44(68.8%)	20(31.2%)	64(100)

Table 2: Clinical profile of leprosy patients.

Group	Males	Females	Deformities	Lepra Reactions
Tuberculoid tuberculoid (TT)	4(6.3%)	2(3.1%)	Grade I: 0 Grade II: 0	Type I: 0 Type II: 0
Borderline tuberculoid (BT)	18(28.1%)	8(12.5%)	Grade I: 3 Grade II: 2	Type I: 2 Type II: 0
Borderline borderline (BB)	6(9.4%)	3(4.7%)	Grade I: 3 Grade II: 1	Type I: 2 Type II: 0
Borderline lepromatous (BL)	5(7.8%)	3(4.7%)	Grade I: 1 Grade II: 1	Type I: 0 Type II: 1
Lepromatous leprosy (LL)	8(12.5%)	3(4.7%)	Grade I: 3 Grade II: 4	Type I: 0 Type II: 4
Pure neuritic	3(4.7%)	1(1.6%)	Grade I:1 Grade II: 0	Type I: 0 Type II: 0
Total	44(68.8%)	20(31.2%)	19(29.7%)	9(14.1%)

advised physiotherapy and splints were also given.

Figure-1. Multidrug therapy of leprosy patients.



The most common form of leprosy was BT which is the most common presentation in Indian population.[13] Although, clinically more number of patients were diagnosed with BT and TT form of leprosy but few of them received MB-MDT as slit-smear and biopsy were suggestive of MB type of leprosy. In one study, it has been reported that patients whose leprosy was diagnosed clinically as PB-type initially, 38.51% of them had MB-type of leprosy and were thus at risk of under-treatment. [14] Our study shows that detection of new cases is still relatively high. Large numbers of new cases have been detected in recent years because of adoption of new strategy, Modified Leprosy Elimination campaign (MLEC), and effective health education campaign. [15] The most important factor that may have significant impact on prevalence of leprosy is the coverage of the entire population with adequate MDT service. [16]

Conclusion: Clinical findings and skin smear examination are required for early diagnosis and adequate treatment to make the patient of leprosy non-infectious. But in some early and borderline cases of leprosy, it is difficult to classify patients into MB and PB type only on clinical basis. So histopathological examination is must for confirmation of diagnosis in doubtful cases of leprosy. Correct labelling of paucibacillary and multibacillary cases is important. No multibacilllary case should be treated as a paucibacillary case. Early diagnosis and adequate treatment of cases with MDT, before nerve damage has occurred, is the most effective strategy for containment of leprosy.

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Original Research Article

Prevalence of Obesity and Hypertension among apparently healthy school children aged 5-15 years of affluent societies of Tirupati

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Abstract

Developing countries are undergoing nutritional transition due to increased economic development and market globalization leading to rapid changes in lifestyle and dietary habits. Malnutrition, in every form, presents significant threat to human health. Developing countries like India are facing the peculiar situation of having to deal with both ends of the spectrum (under-nutrition and overnutrition) of nutritional disorders. The prevalence of hypertension in children is reported to be 1-3%. Elevated blood pressure in children and adolescents may be an early expression of essential hypertension in adulthood. The prevalence of obesity and hypertension in the present study was 3.89% and1.36% respectively. Girls were found to be more obese than boys and the difference is statistically significant. Out of 74 obese children, nearly three fourth of them 72.9 %(54) were in the age group of 11-15years and remaining 27.1% (20) were belonged to 5-10 years age group.

Key words : obesity , hypertension, BMI , anthropometry

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Introduction

Malnutrition, in every form, presents significant threat to human health. The world today faces a double burden of malnutrition which includes both under nutrition and obesity, especially in developing countries.[1]

WHO designated obesity as a global epidemic[1] in view of increasing incidence of

obesity and its complications. The International Obesity Task Force (IOTF)[2]; World Health Organization (WHO) estimate of the global prevalence of overweight (including obesity) among children aged 5-17 years is 10% with an unequal distribution ranging from 30% in America to <2% in Sub-Saharan Africa. Developing countries like India are facing the peculiar situation of having to deal with both ends of the spectrum of nutritional disorders. India is poised to be among the top four economic countries by 2020.[3] In India, approximately 19% (190 million) of the growing population comprises school-aged children of whom 30% (48 million) currently reside in urban India. Childhood obesity is a single marker of the child at risk for development of various non-communicable diseases later in life.

Invariably obesity is a product of imbalance between energy intake and energy output. Several factors such as overeating, psychosocial factors, physical inactivity and genetic predisposition trigger this energy imbalance.[3]

On one hand, under nutrition is an epidemic which has been in vogue for ages. On the other hand, over nutrition evident as overweight and obesity has been recently on the rise.

The prevalence of hypertension in children is reported to be1-3%.[4] World Health Organization has recognized it and expressed its concern by observing the year 1978 with the slogan "Down with Blood Pressure".

Elevated blood pressure in children and adolescents may be an early expression of essential hypertension in adulthood.[5]

Aims and Objectives: To estimate the prevalence of obesity and hypertension and to determine the association between obesity and hypertension among apparently healthy school children aged 5-15 years of Tirupati

Materials and Methods

A community based (school-based study) cross-sectional study was conducted from September 2013 to August 2014 in Tirupati urban area. The minimum sample size was estimated from the earlier studies that the prevalence of obesity was 5% and the prevalence of hypertension was 1-3%. For the present study, sample size is estimated using the prevalence rate of 5% with 20% acceptable (allowable) error at 95% confidence level. Sample size for the study is 1825. Apparently healthy school children aged 5-15 years were included to the study and those children who are suffering from

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chronic illness, on long term medications and children with congenital anomalies, children diagnosed to be obese and hypertensive secondary to other cause were excluded from the study.

Study Methods

A list of schools with fee structure of around Rs. 30,000/- per annum in the urban area of Tirupati was obtained and the permission to undertake the study in such schools was obtained from the school principals. From the list of schools four schools were selected using lottery method of simple random sampling.

A pilot study was done in the school which was not selected for the study and the data obtained was not used in the study proper. Then the total sample size was increased to 1900 for convenient calculation.

Initially questionnaires were issued to the students. After the questionnaire was filled up, students were asked to come to the investigator with their questionnaires in hand and then their weight and height were measured and BP was recorded one by one and was noted in their respective questionnaires with the help of teachers. After collection of data from all the four schools, the questionnaires were used for analysis.

For boys, anthropometry and BP were recorded by the investigator. But for girls; they were recorded by a female doctor. Data was analyzed by using MS Excel 2010 statistical software package, Epi Info7 version software and also SPSS17 version statistical software package.

Method of anthropometric measurements**:** As per norms.

BMI was calculated using the formula:

$$BMI = \frac{Weight(Kg)}{Height^2(sq.m)}$$

A child with BMI for age and sex between 85^{th} and 95^{th} percentiles were considered over weight and those with BMI for age and sex above 95^{th} percentiles were considered obese.

Results

Table1- Age group and gender distribution of the study sample

Age(years)	Male n (%)	Female n (%)	Total n (%)
05 – 08	266 (21.5%)	199 (9.6%)	465(24.5 %)
09 – 12	470 (38.0%)	231 (35%)	701(36.9 %)
13 – 15	504 (40.6%)	230 (34.5%)	734 (38.6%)
Total	1240(100 %)	660(100 %)	1900(100 %)

Note: Percentages indicate column percentages

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Table 2- Age group distribution of obese and overweight children

Age (years)	Normal	Overweight	Obesity	Total
5- 8	425 (91.3%)	23 (4.9%)	17 (3.6%)	465 (24.4%)
9-12	654 (93.2%)	25 (3.5%)	22 (3.1%)	701 (36.8%)
13-15	648 (88.2%)	51 (6.9%)	35 (4.7%)	734 (38%)
Total	1727 (90.8%)	99 (5.2%)	74 (3.8%)	1900 (100%)

The body mass index has range from 10.84kg/m^2 to 24.70Kg/m^2. The mean body mass index was 17.34± 2.32kg/m^2.

Table 3- Age wise distribution of prevalence of hypertension and Pre-hypertension in the study population

Age (years)	Normal	Pre-hypertension	Hypertension	Total
5 – 8	461 (99.1%)	1 (0.21%)	3 (0.6%)	465 (24.4%)
9 – 12	685 (97.7%)	6 (0.8%)	10 (1.4%)	701 (36.8%)
13 – 15	704 (95.9%)	17 (2.3%)	13 (1.7%)	734 (38.6%)
Total	1850 (97.3%)	24 (1.2%)	26 (1.3%)	1900 (100 %)

Table 4 – Sex wise distribution of prevalence of non-obese and obese with hypertension and non-hypertension.

Sex	BMI		Total	Blood pressure		Total
	Non obese	Obese		Non hypertensive	Hypertensive	
Male	1214 (97.9%)	26(2.0%)	1240(100%)	1221(98.4%)	19 (1.5%)	1240(100%)
Female	612 (92.7%)	48(7.2%)	660(100%)	653(98.9%)	7 (1.0%)	660(100%)
Total	1826 (96.1%)	74(3.8%)	1900(100%)	1874 (98.6%)	26 (1.3%)	1900(100%)
	x^2= 30.83 df 1 p=<0.0001S			***x^2= 0.71 df 1 p= 0.39NS***		

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Table 5- Distribution of hypertension in overweight and obese children

	Pre-hypertension	Hypertension	Total
Overweight	14 (63.63%)	9 (34.61%)	23
Obese	8 (36.36%)	17 (65.38%)	25
Total	**22 (100%)**	**26 (100%)**	**48**

x^2= 4.02 df 1 p= 0.04S

Table 6- Age wise distribution of Blood Pressure in obese children

Age	Non-hypertensive	Hypertensive	Total
5-10 years	18 (90%)	2 (10%)	20 (100%)
11-15 years	39 (72.2%)	15 (27.7%)	54 (100%)
Total	57 (77.02%)	17 (22.9%)	74 (100%)

Fisher's exact test and 2tailed p-value= 0.13NS

Table 7- Sex wise distribution of hypertension among obese children

Gender	Normal	Pre hypertension	Hypertension	Total
Male	8 (30.76%)	5 (19.23%)	13 (50%)	**26 (100%)**
Female	41 (85.41%)	3 (6.25%)	4 (8.33%)	**48 (100%)**
Total	49 (66.21%)	8 (10.81%)	17 (22.9%)	**74 (100%)**

x^2= 22.98 df 1 p=<0.0001S

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Discussion

Study was undertaken in "Tirupati" city, being a locality of Sri Venkateswara medical college. The present study was carried out among 1900 apparently healthy school children aged 5-15 years. The proportion of males is 65.26%(1240) and that of females is 34.73%(660). Most of the study subjects were aged 12 years followed by 15 and 13 years.

Prevalence of obesity and overweight.

Out of the study population of 1900 (100%), 74(3.89%) apparently healthy school children are obese. It correlates with the study done by Premnath M et al[5] (3.4%). Studies conducted in different parts of India on school children have come out with prevalence ranging from 0.35% (Deoke et al[6] –2012) to 6% (Sharma et al[7] –2007). Out of 1900 (100%) study population, 99 (5.21%) apparently healthy school children are overweight. It Correlates with the study done by Chakraborty et al[8] (5.43%).

Prevalence of hypertension

Out of 1900 study population, 26 (1.36%) apparently healthy school children are hypertensive correlates with the study done by Verma et al[9]. Studies have come out with prevalence of hypertension ranging from 0.41% (Gupta et al[10]) to1.8% (Aggarwal et al[11]).

Gender wise prevalence of obesity

In the present study out of 1240 (100%) boys, 2.09% (26) were obese whereas out of 660 (100%) girls, 7.27% (48) were obese.

Girls were found to be more obese than boys and the difference is statistically significant similar to Mudur et al[12] and Sonya Jagadesh et al[13]

Gender wise prevalence of hypertension

In the present study out of 1240 (100%) boys, 1.53% (19) are hypertensive and among 660 (100%) girls, 1.06% (7) The percentage of hypertensive boys are slightly higher than girls but the difference is statistically insignificant similar to the Anandan et al [14].

Age group wise prevalence of hypertension among obese children

Out of 74 (100%) obese children,72.9% (54) belonged to 11-15years age group whereas only 27.02% (20) belonged to 5-10years age group. Out of 54 (100%) obese children of 11-15 years age group, 27.7% (15) are hypertensive. Out of 20

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(100%) obese children of 5-10 years age group, 10% (2)are hypertensive correlates with Chada et al[15] and Mohan et al [16] in contrast with Anjan et al [17].

Prevalence of obesity among hypertensive children

The present study shows that among hypertensive children 65.3% are obese. Similar findings were reported in many other studies. Close relevance was found in the study conducted by Gupta et al[10], Bengalorkar et at[16]

Conclusion

In the present study, prevalence of obesity is 3.89% and hypertension is 1.36% among apparently healthy school children aged 5-15 years of Tirupati. Prevalence of obesity is more in girls than in boys and the observation is statistically significant. Prevalence of hypertension is slightly higher in boys but the observation is statistically insignificant. .Anthropometric variables like height, weight and body mass index showed positive correlation with systolic as well as diastolic blood pressure. Obese children are at a higher risk of "childhood onset of adult diseases". Thus, timely recognition and intervention will result in decreased adulthood morbidity and mortality.

Limitations of the study

Though the study was done in co-educational schools, boys constituted a major share of the study population. Most of the children belonged to 12 years and above age group.BMI was used as criteria to label obesity, but BMI may not be a sensitive measure of body fatness in children who are particularly short, tall or have an unusual body fat distribution, and may misclassify subjects with highly developed muscles as obese. Pubertal staging of the study population was not assessed. The adiposity rebound at puberty could have influenced the BMI. No attempt was made to measure the BP of the parents, whose children were labelled as hypertensive. Hence the true state of affairs regarding parental hypertension might have been missed.

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Original Research Article

Quality of Life in Cervical Cancer Patients on Follow-Up Care in a Regional Cancer Center in South India

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Abstract

CONTEXT: Better survival rates have driven the cancer care from a medical illness model to a wellness model, which is concerned with the quality of women's lives as well as the length of survival. AIMS: To evaluate the association between socio-demographic and disease characteristics with Quality of Life (QOL) in cervical cancer survivors. SETTINGS AND DESIGN: Descriptive study on quality of life of cervical cancer survivors carried out in Regional Cancer Center, JIPMER METHODS AND MATERIAL: After informed consent, 267 subjects were interviewed using a structured questionnaire on socio-demographic and disease characteristics and WHOQOL-BREF.QOL was assessed in four domains namely, physical, psychological, social and environmental domains. STATISTICAL ANALYSIS: Subjects were categorised as having good and poor QOL depending on the median score for each domain. Univariate analysis was done using ANOVA and Student's t-test. Factors influencing QOL in each domain were identified using multiple linear regression. Statistical analysis was done using SPSS 13.0.RESULTS AND CONCLUSIONS: Greater proportion of patients had poor overall QOL, with the highest proportion of subjects having lower QOL scores in the psychological domain (71%). Cervical cancer survivors who were uneducated, widowed, postmenopausal and those with recurrence of disease are at increased risk of having poor QOL. Factors influencing QOL in this population can be an effective guide in formulating such interventions, with special emphasis on at risk subjects. Psychological interventions in the form of counselling should be provided as an integral component of cancer management, introducing a humanistic element in the health care.

KEYWORDS: Cancer cervix, Quality of care, influencing factors

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Introduction

Cervical cancer is the commonest cancer among women in India [1]. Crude incidence rate of cervical cancer in India is 23.5 per lakh women per year as compared to 15.8 per lakh women per year in the world [2]. Chennai registers the highest incidence among other cancer registration centers i.e.24.2 per lakh women per year [3].The increasingly mechanistic model of medicine, concerned only with the eradication of disease and symptoms, reinforces the need

for the introduction of a humanistic element into health care [4]. Cancer not only affects physical health but also psychological and social health and hence person's ability to lead a socially and economically productive life. WHO defines health as "a state of complete physical, mental and social wellbeing and not merely an absence of disease or infirmity". Therefore health measurement must include not only signs and symptoms of disease but also an estimation of wellbeing which can be measured by assessing quality of life (QOL) [4].

World Health Organization (WHO) defines QOL as "individual's perception of their position in life in the context of culture and value systems in which they live and in relation to their goals, expectations, standards and concerns" [4]. In the past few decades, due to improved screening rates in cancer cervix, majority of cases are now diagnosed in earlier stages, resulting in longer disease-free intervals and improved survival rates [5]. Better survival rates have driven the cancer care from a medical illness model to a wellness model, which is concerned with the quality of women's lives as well as the length of survival. Therefore, there is a greater opportunity and necessity to examine long-term QOL and survivor characteristic in this population of women [7]. Thus, the assessment of QOL among cervical cancer survivors has become increasingly paramount for health care professionals [6]. Socio-demographic factors like age, education & income [8] and medical factors like stage & disease status [6] have been shown to affect QOL. In this context, this study was conducted to assess the quality of life of the cervical cancer patients on follow-up care attending Regional Cancer Centre, JIPMER and to identify the association between socio-demographic and medical factors with the QOL in these patients.

MATERIALS AND METHODS:

This was a hospital based descriptive study conducted in the Regional Cancer Centre (RCC)**.** Ethical Clearance from Institutional Ethics Committee was obtained. The cervical cancer patients between ages 18 to 65 years attending RCC for follow up care and not having received any active treatment for past 3 months were approached and informed consent was taken for inclusion into the study**.** During this period 267 cervical cancer patients were interviewed using a structured questionnaire which was translated into the vernacular language, Tamil. It consisted of 2 sections. The first part established information about socio-demographic and medical history. The different socio-demographic variables studied were age, education, occupation, income and marital status; Modified Prasad's classification was used to classify the socio-economic status. Disease and treatment characteristics included in this study were pre-treatment menopausal status, co-morbidities, tumor stage, treatment modality, duration since completion of treatment and disease status.

Table 1 Socio-demographic characteristics of participants

Variable	Category	n	%
Age (years)	31-40 41-50 >50	31 94 142	11.6 35.2 53.2
Education	Uneducated Primary school Secondary school	181 49 37	67.8 18.4 13.8
Occupation	Housewife Unoccupied Agricultural workers & others	198 18 51	74.2 6.7 19.1
Socio-economic status	Class II(Rs.1530-3100) Class III(Rs.940-1529) Class IV(Rs.470-939) Class V(Rs.<470)	13 76 100 78	4.9 28.5 37.5 29.1
Marital status	Married Widowed Separated	163 102 2	61.0 38.2 0.8
Menopausal status before treatment	Attained Not attained	119 148	44.6 55.4
Comorbidities	No comorbidity Diabetes, Hypertension or both Others	231 34 2	86.5 12.6 0.9
Tumor Stage	CIS Stage I Stage II Stage III Stage IV	1 12 125 127 2	0.4 4.5 46.8 47.6 0.7
Treatment Undergone	RT CT, RT Surgery, CT and RT	234 17 16	87.6 6.4 6.0
Duration since completion of treatment	<5 years 5-10 years ≥ 11 years	210 44 13	78.7 16.5 4.8
Disease status	Disease free Residual disease Residual side effects	206 15 46	77.2 5.6 17.2

Table 2: Association of domain wise QOL with socio-demographic and disease characteristics of cervical cancer patients (n=267)

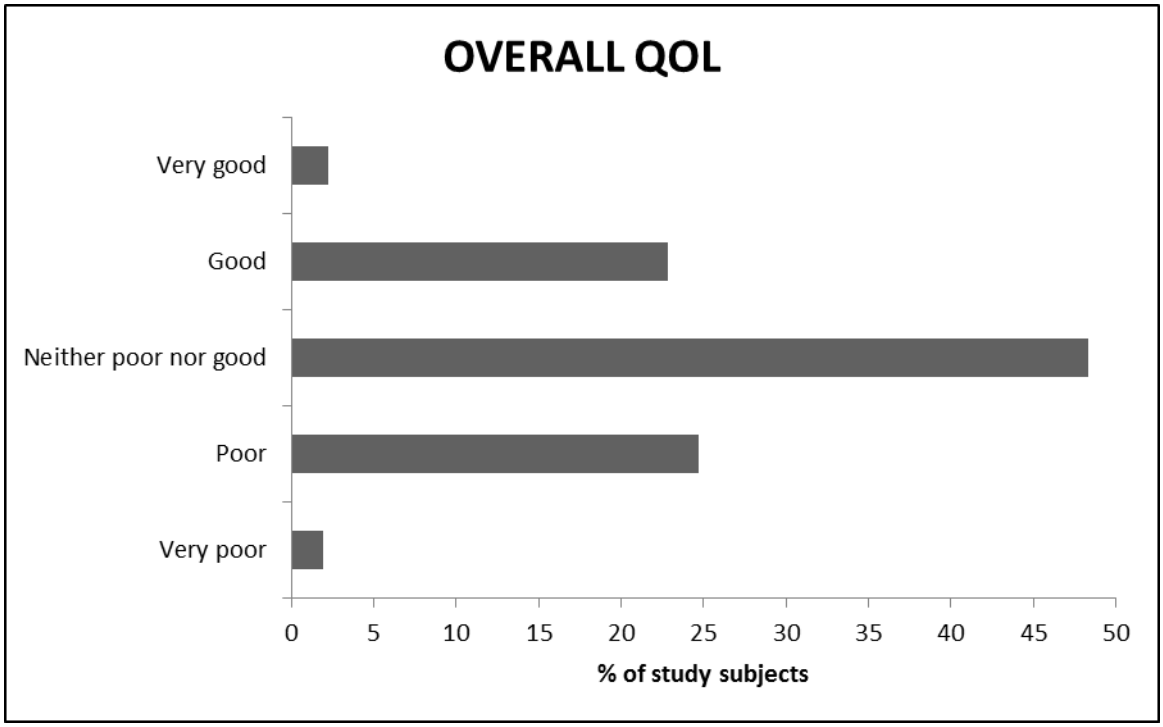
CATEGORIES		n	PHYSICAL DOMAIN	PSYCHOLOGICAL	SOCIAL DOMAIN	ENVIRONMENTAL
Age	31-40	32	55.4± 21.0	59.0±13.4	**65.9 ±15.9***	**63.8 ±12.5***
	41-50	93	47.5± 19.6	53.5 ±14.3	**73.0 ±11.2**	**71.3 ±13.2**
	>51	142	47.0 ±19.7	55.3 ±14.6	**69.9 ±12.7**	**67.3± 11.9**
Education	Uneducated	181	**45.9 ±19.6***	54.0 ±13.4	70.2 ±12.9	67.5 ± 12.8
	Educated	86	**52.9 ±20.0**	57.4 ±16.3	71.1±12.6	69.9± 12.4
Occupation	Housewife& unemployed	216	47.6+ 20.2	54.6 ±14.4	71.2± 12.5	68.6 ± 12.7
	Employed	51	50.6± 19.0	57.4 ±14.2	67.6± 13.9	66.9 ±12.8
Socio-econ status	Class II&III	89	46.9 ±20.4	55.9 ±14.2	68.3 ±12.0	67.4± 13.4
	Class IV&V	178	48.8 ±19.8	54.8 ±14.6	71.6 ±13.0	68.7± 12.2
Marital status	Married	163	49.0± 20.6	56.1±14.3	**72.3 ±12.5***	**69.8±12.9***
	Widows & separated	104	46.9 ± 18.9	53.6 ±14.5	**67.7 ±12.9**	**65.8± 11.9**
Menopausal status	Not attained	119	**52.3 ±22.6***	**57.4 ±16.1***	71.7 ±13.3	**70.1± 14.3***
	Attained	148	**44.8 ±16.9**	**53.4 ±12.7**	69.5± 12.4	**66.8± 11.0**
Comorbidities	Absent	231	47.7± 20.0	54.7 ±14.0	70.9 ±12.4	68.2± 12.7
	Present	36	51.2 ±19.6	57.7 ±17.0	68.1 ±14.8	69.1± 12.6
Tumour stage	CIS, Stages I& II	138	**50.7 ±21.4***	**58.1±15.3***	71.0 ±12.6	**70.9± 12.8***
	Stages III& IV	129	**45.4± 17.9**	**51.9 ±12.7**	69.9 ±13.0	**65.4± 12.0**
Treatment undergone	RT	232	**48.3 ±19.8***	55.0 ±14.2	70.5± 13.2	**67.5± 12.4***
	CT,RT	17	**38.3± 17.6**	52.2 ±12.4	69.5 ±10.1	**71.1± 11.8**
	Surgery,CT & RT	18	**55.3 ±21.3**	59.4±18.0	71.1 ±10.5	**75.2± 14.6**

Durn. since treatment	<5 years	210	47.2 ±19.4	54.8 ±14.0	70.4 ±13.0	67.8± 12.8
	≥ 5 years	54	51.8± 21.6	56.4 ±15.9	70.7 ±12.0	70.1± 12.2
Disease status	Disease free	206	**51.8 ±19.4***	**57.5 ±14.5***	70.3 ±12.2	**69.4± 12.7***
	Residual disease	15	**34.9 ±20.1**	**47.2 ±12.0**	69.5 ±20.1	**60.5± 12.4**
	Residual side effects	46	**36.1±15.8**	**46.9 ±10.2**	71.8 ±12.4	**66.0± 11.7**
TOTAL		**267**	**48.2 ± 19.9**	**55.1 ± 14.4**	**70.4 ± 12.8**	**68.3 ± 12.7**

Table 3: Multivariate analysis for domain wise QOL and socio-demographic, disease characteristics of cervical cancer patients

CATEGORIES	PHYSICAL DOMAIN		PSYCHOLOGICAL DOMAIN		SOCIAL DOMAIN		ENVIRONMENTAL DOMAIN	
Age					1.5 ±1.1	0.199	2.6 ± 1.5	0.078
Education	**6.3± 2.4**	**0.01**						
Socio-econ status					3.2 ±1.6	0.053		
Marital status					**-4.8± 1.6**	**0.003**	**-3.5± 1.5**	**0.025**
Menopausal status	**-6.7± 2.3**	**0.004**	**-3.4 ± 1.6**	**0.043**			**-4.2 ± 2.1**	**0.043**
Tumour stage	-1.1± 2.3	0.615	**-4.1 ± 1.7**	**0.018**			**-4.1± 1.5**	**0.009**
Treatment undergone	-0.4 ± 2.1	0.818					**3.1± 1.4**	**0.025**
Disease status	**-8.3± 1.5**	**0.000**	**-5.0± 1.1**	**0.000**			-1.3± 1.0	0.190

Fig 1: Overall Quality of Life and General health status in cancer cervix patients (n=267)



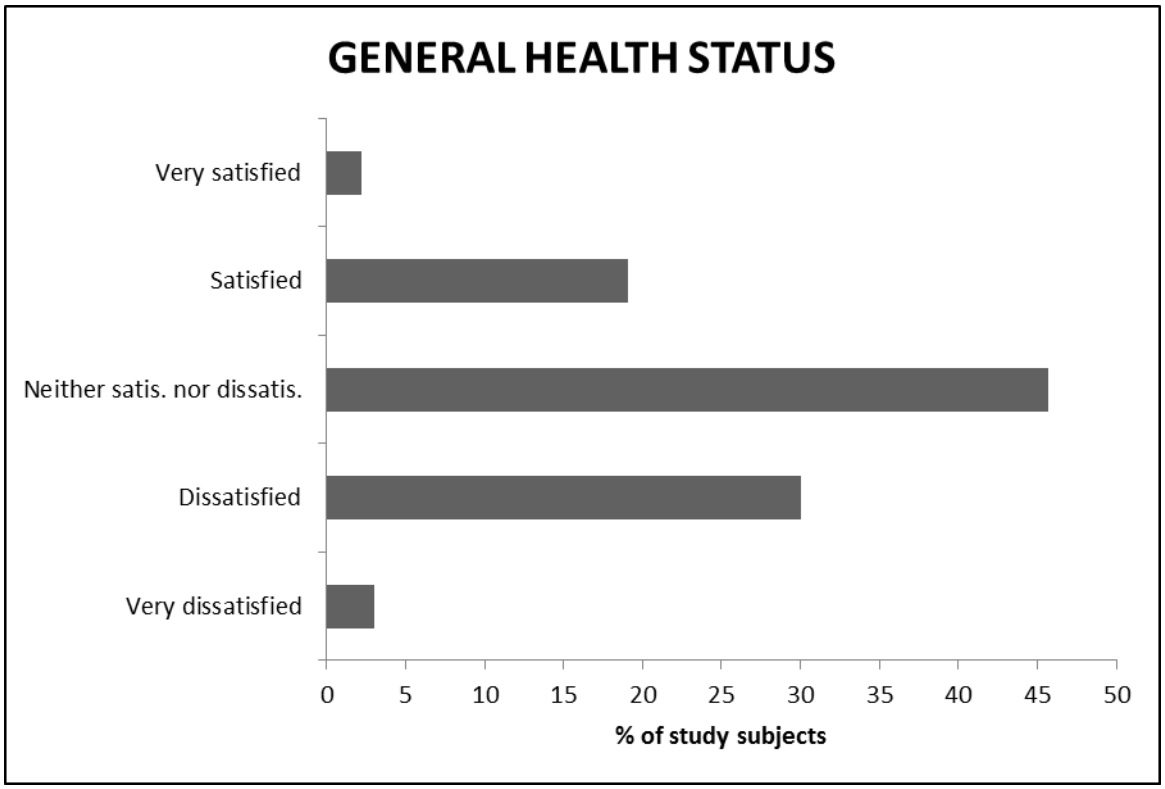
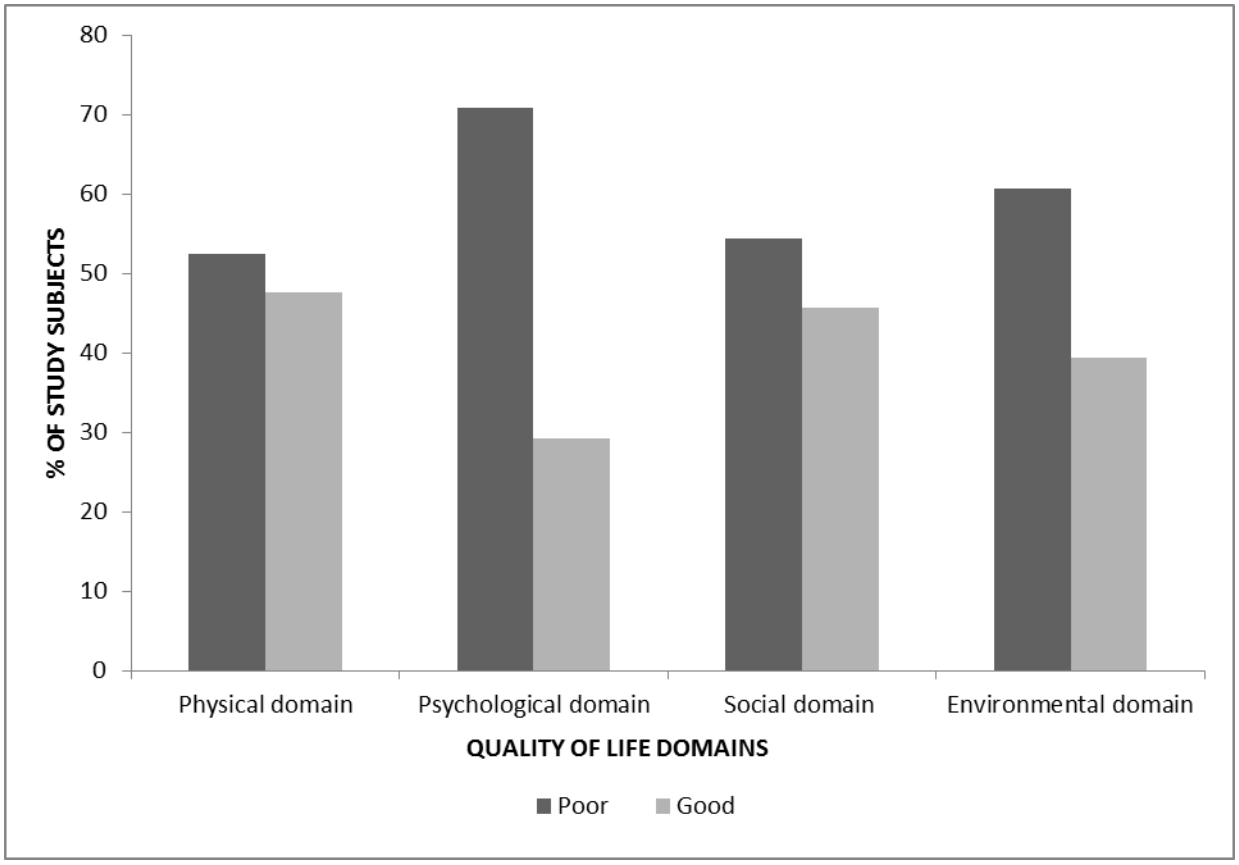


Figure 2: Quality of Life in cancer cervix patients across four domains (Physical, Psychological, Social and Environmental) n=267



The second part assessed QOL by the WHOQOL-BREF questionnaire, a reliable and validated evaluation tool [9]. QOL was assessed in 4 domains: physical, psychological, social and environment. The questionnaire consists of 26 questions and each question was scored from 1-5 in a positive direction (i.e. higher scores denote higher QOL). After its administration to the study subjects, the raw scores were converted to transformed scores. The first transformation converts scores to a range of 4-20 and the second transformation converts domain scores to a 0-100 scale. Higher scores reflect a better quality of life [10].The overall QOL and the general health status, as per the responses to the Questions 1 and 2 of WHOQOL-BREF were also considered.

In each domain the median score for the subjects was calculated and the patients were categorised as having good and poor QOL depending on whether they had scores more or less than the median score. Univariate relationships between socio-demographic and disease characteristics, and WHOQOL scores were analyzed with one-way ANOVA and Student's t-test. Factors influencing QOL were identified using multiple linear regression with the four domain scores as the dependent variables. The final regression model included only variables with *P* value <0.05. Statistical analysis was done using SPSS 13.0.

RESULTS:

In this study all 267 cervical cancer patients on follow-up care were from different districts in Tamil Nadu and Pondicherry. Most of the patients studied belonged to the age group of 51-60 yrs (38.2%) followed by the age group 41-50 yrs (35.2%) (**Table 1**). Almost three-fourths of the study population were housewives, 6.7% were unoccupied, whereas agricultural workers comprised 17%, 2.2% were engaged in other occupations like teacher, anganwadi worker, flower seller, maid servant and bidi leaves roller. Majority of patients were uneducated (67.8%), while 18.4% and 13.9% received education till primary and secondary school respectively. Of the study group, 61% were married, while 38.2% were widowed. Most of the patients (37.5%) belonged to Class IV of modified Prasad's classification followed by 29.2% and 28.5% in Class V and Class III respectively. While 55.4% of patients had attained menopause before treatment, rest had not.

As for the disease status, 77.2% were disease free, 5.6% had residual disease, recurrence or metastasis, 17.2% suffered from residual side-effects of treatment though being disease free. Forty seven percent had cancer in the tumor stage III and 46.8% in stage II. Percentage of patients with stage I cancer cervix was 4.5%, while 1 and 2 out of 267 patients had cancer cervix in situ and stage IV respectively. Eighty eight percent received only radiotherapy as treatment, 6.4% received chemotherapy & radiotherapy and 6% received all three forms of treatment (surgery, chemotherapy & radiotherapy). Duration of treatment ranged from 15-29 days for most of the subjects (88.8%). Duration since completion of treatment for majority (78.7%) of patients was between 3 months to 5 yrs. Among the co-morbid conditions, diabetes, and hypertension was present in 5.6% and 4.1% respectively, 3% subjects had both; while majority did not have any co-morbidity.

The overall QOL as answered to question 1 in the WHOQOL BREF shows that while 48% had neither poor nor good QOL, 25% reported poor or very poor QOL **(fig. 1)**. Greater percentage of patients was dissatisfied with their health (33%) as compared to those who were satisfied (22%). Domain wise QOL of study subjects showed greater proportion of patients had poorer QOL in all domains, highest being in psychological (70.8%) and environmental (60.7%) domains **(fig. 2)**. But the overall mean score was highest in social domain (70.4 $\pm$ 12.8), followed by environmental (68.3 $\pm$ 12.7), psychological (55.1 $\pm$ 14.4) and physical domains (48.2 $\pm$ 19.9). The overall QOL was significantly associated with all 4 domains (physical, psychological, social and environmental) of QOL measurement validating the responses in each domain (Chi-square=1.147, 1.537, 9.937, 21.775; $p<0.000$, 0.000, 0.042, 0.000 respectively). Present health status is associated significantly with physical, psychological and environmental domains (Chi-square=1.097,

1.469, 27.088; p<0.000, 0.000, 0.000 respectively).

Uni-variate analysis of mean QOL scores according to the various subject characteristics **(Table 2)** showed that there was a decline in the mean QOL score from 31-40 yrs, 41-50 yrs and >50 yrs age categories in the physical domain, though not statistically significant. In the social and environmental domains, the scores are significantly higher in 41-50 years patients. Married women had better QOL in all domains, but significantly higher in the social and environmental aspects. Occupational status wise scores of QOL did not show any statistically significant difference among these cancer cervix survivors in any of the domains. The physical QOL was better in the educated group; income wise difference was found only in the social domain. Statistically significant lower scores for QOL was found among the post-menopausal women in physical, psychological and environmental domains.

Presence of co-morbidities and duration since treatment did not influence the QOL in any of the domains. Women having advanced stage of disease at the time of diagnosis, having undergone all modes of treatment and having residual disease, recurrence and metastasis had worse QOL in the physical domain. The advanced tumour stage and current residual disease significantly lowered the QOL in psychological and environmental domains also.

On multi-variate analysis **(Table 3)**, education, menopausal and disease status were found to influence the physical QOL. Menopausal status along with tumour stage and disease status significantly lower the QOL in the psychological domain. Marital status alone affects the social aspects of QOL whereas marital status, tumour stage and type of treatment undergone influence the environmental domain of QOL.

DISCUSSION:

The disease process had greatest impact on the physical health, the QOL score in this domain being the least. Effects of the disease and the treatment process may be acting synergistically to worsen the already poor physical health of the women in India. Menopausal status rather than age was more associated with women's health. While Wenzel et al [7] observed that cervical cancer survivors-specific distress was significantly associated with younger age, a study done by Bradley et al, in University of Iowa, USA found no significant association of age with QOL [11]. In this study, better QOL was noted in the physical domain among educated women. Education broadens the outlook of patients to the disease as well as its course and thence they are able to cope better with the circumstances. However, Bradley et al did not find any significant association between education and QOL [11]. Disease status in terms of residual disease, recurrence and metastasis was the strongest predictor of the physical QOL scores. In contrast, Lutgendorf et al also

observed that disease extent and treatment intensity did not predict physical well-being [12].

The highest proportion of subjects had lower QOL scores in the psychological domain, the mean score in this domain being lower than the social and environmental domains of QOL. None of the patients at this centre had received counselling at any stage of the disease. The strongest predictor for the poorer psychological status of the patients on follow up was disease status followed by stage of tumour and the menopausal status. Similarly studies have shown that survivors continuing to experience side-effects of treatment reported poorer overall QOL (p=0.09) as compared to individuals who are disease-free after treatment [11].A study by Wenzel et al [7] reported that the sample of disease free cervical cancer survivors enjoyed a good QOL, with physical, social and emotional functioning comparable to or better than comparative norms. However, certain psychological survivorship sequelae and reproductive concerns persist.

The social domain of QOL which is determined by personal relationships, social support and sexual activity, showed the highest mean (70.49 $\pm$ 12.79) among all four domains. The social aspect may be least affected because of the strong family structure existing in India. The only factor diminishing the QOL score in this domain is marital status. The lack of support from the spouse due to widowhood or separation causes deterioration in the QOL. Bradley et al. reported that unmarried cancer survivors were more likely to show decrements in QOL, mood and mental health [11].Little social support was associated with poor psychological QOL [13] and social support directly influences QOL [14].Therefore patients who do not have someone to share their emotions are at increased risk of having poor QOL and this persons can benefit from intervention of health care professionals.

The mean QOL score is better in the environmental domain as compared to the physical and psychological domains probably due to the better adjustment of Indian women to the various aspects in this domain like availability of financial resources, physical safety, security, accessibility to health and social care, etc. Still the factors which worsened the QOL in the environmental domain were loss of spouse (widowhood and separation), advanced stage of the disease and having undergone all the modalities of treatment. In contrast, stage of disease had no significant effect on QOL [15, 16].

No significant association was found between income, occupation status and different domains of QOL in this study. Bradley et al showed that unemployed cervical cancer survivors reported significant decrements in QOL, mental health, and mood. However, the strength of these relationships diminished when physical well-being was entered as a covariate, suggesting that differences in mood with respect to employment

status may have been related to physical ability to work [11].

Health care personnel should be especially attentive to the physical and psychological well-being of this vulnerable segment of cancer cervix survivors. Factors influencing QOL in this population can be an effective guide in formulating such interventions, with special emphasis on at risk subjects. Psychological interventions in the form of counselling should be provided as an integral component of cancer management introducing a humanistic element in the health care.

CONCLUSIONS:

The overall QOL and current health status were significantly associated with all 4 domains of QOL measurement. Greater proportion of patients had poor overall QOL, with the highest proportion of subjects having lower QOL scores in the psychological domain (71%). Based on the above study we found that cervical cancer survivors who were uneducated, widowed, postmenopausal women and those with recurrence of disease are at increased risk of having poor QOL. Factors influencing QOL in this population can be an effective guide in formulating such interventions, with special emphasis on at risk subjects.

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Original Research Article

Prevalence of Tobacco Smoking and KAP about Smoking among Students of a Private Medical College in Central Kerala

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Abstract

Background: Smoking is a leading cause of preventable death globally, contributing to more than 5 million estimated deaths every year. Smoking among health care personnel such as medical students is an important public health issue. This study was done to understand and in future find effective measures to reduce tobacco smoking among medical students. **Objectives**: To find the prevalence and to assess knowledge, attitude and practice of tobacco smoking among students of a Private Medical College in Central Kerala. **Material and Methods**: Cross-sectional study, using pretested, anonymous questionnaire, was conducted in a private medical college in central Kerala and proportions, test of significance like $\chi^2$and t test were used. **Results**: Out of 342 students, 26 (7.6%) were smokers; Males 25 (21.0%, out of 119), females 1 (0.44% out of 223), 72 (21.1%) had ever smoked; of which 60 were males (50.42%) and 12 (5.38%) were females; 82 (24%) had family members who smoked; 196 (57.3%) had relatives who smoked; and 184 (53.8%) had a smoker in their friend circle. The 26 smokers had a mean age of 21.88 years, SD1.306 years, as compared to 316 non-smokers who had a mean age of 20.71 years, SD 1.745 years, t-test value 4.297, P=0.000. Thirty two students (9.4%) did not know that sterility is caused by smoking. 22 (78.57%) were mild smokers, 5 (17.85%) were moderate smokers and 1 (3.5%) was severe smoker. Eleven (3.2% of the total and 34.37% of smokers) claimed to smoke on the college property; 68.4% of students do not like to socialize or engage in activities with smokers. 17 (53.2% of smokers) want to quit smoking; 17 (51.5% of smokers) claimed to have a relapse. **Conclusions**: Prevalence of smoking was found to be 7.6%. Besides, it was observed that smoking habit is more among males (21% of total males). Smokers are predominantly more between 21-26 years of age. Most students started the habit of smoking between 16-20 years of age, therefore it is necessary to bring positive behavioral changes through adoption of comprehensive awareness programs on harmful effects of smoking among adolescent school going children.

Key words: smoking, medical students, prevalence, KAP.

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Introduction

Smoking is a problem with worldwide dimension. It is one of the most important causes of pulmonary and cardiac diseases. Government of India has passed a law not just highlighting the dangers of smoking but also banning it in various forms to protect the health of the public.[1]

Health professionals, including medical students, should ideally play an important role in the fight against tobacco use but several reports suggest that a good number of medical students are themselves addicted to tobacco**.** We need to take steps to stop its use by them so as to prevent them from being exposed to its hazardous effects. This will also make their role in the advocacy of the smoking cessation activities more trustworthy.[2]

As medical students, who are usually in their adolescence, progress through the medical school, their behaviour regarding the use of tobacco equals or even exceeds the rates in the non-medical peer groups, despite their knowledge of smoking-related diseases. As such, many researchers have historically investigated tobacco-smoking rates among this demographic group.[3]

As future physicians who will witness the continued burden of smoking-related diseases among their patients, medical students represent a primary target for tobacco-prevention programs. A recent study in Kerala showed that substantial proportion of physicians and medical students continue to smoke.[3]

Over the past 60 years many studies have been done, in which recent studies among medical students show- Prevalence of smoking in south India was found to be 22.4% [(2)]; In Orissa in the year 2005 the prevalence of smoking was 8.7% [(3)]. The prevalence of smoking among tobacco users (28.8%) was found to be 87.5% in a study conducted in Lucknow in the year 2008.[4] In a study done in Allahabad prevalence of smoking was 33% out of 560 responders.[5]. Prevalence of smoking was observed as 5.5% in Kannur district of Kerala in the year 2011.[6] There was 32.55% prevalence of smoking in Maharashtra in the year 2008.[7]

This study was done to understand the magnitude of current smoking scenario and to find effective measures to reduce tobacco smoking among medical students in future.

Aims and Objectives: To study the prevalence of tobacco smoking among students of a Private Medical College in Central Kerala and to assess knowledge, attitude and practice of tobacco smoking among students.

Material and Methods: A cross-sectional study was designed in a private medical college in Central Kerala and included all the students in the month of November 2014.

Permission for the study was taken from Institutional Research Committee and Institutional Ethics Committee. Data was

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collected using a pre-tested, anonymous, questionnaire. The students were briefed about the purpose of the study; their consent was obtained before filling the questionnaire. They were reassured about the anonymity and confidentiality of the information. The collected data was tabulated using MS Excel and analysed using Epi Info 7. Significance was found using χ^2test and t-test.

Results

Demographic profile: Responses from 342 students were included in the survey. The mean age of our study subjects was 20.80 years. Among the total responders, 119 (34.8%) were males and 223 (65.2%) were females; 16 (19.9%) were Christians, 226 (66.1%) were Hindus and 48 (14.0%) were Muslims; 170 (49.7%) were from rural area and 172 (50.3%) were from urban area; 34 (9.9%) were day scholars and 342 (90.1%) were hostellers.

Prevalence: Out of 342 students, 26 (7.6%) were smokers; Males 25 (21.0%) out of 119, female 1 (0.44%) out of 223. Seventy two (21.1%) had ever smoked; of which 60 were males (50.42%) and 12 (5.38%) were females. Out of 72 ever-smokers, the age for trying cigarettes was under 10 years for 10 (13.88%), 11 to 15 years for 12 (16.66%), 16 to 20 years for 31 (43.05%) and for 21 years old or above for 19 (26.38%).

Out of 342, 82 (24%) had family members who smoked; 196 (57.3%) had relatives who smoked; and 184 (53.8%) had a smoker in their friend circle.

Knowledge: See table 1 for knowledge of students about facts associated with smoking.

Table 1- Knowledge related to Smoking. (N=342.)

Knowledge About	Not Aware (%)	Aware (%)
Carcinoma of lung, gums & Oral Cavity	1 (**0.3**)	341 (99.7)
Smoking leads to Sterility	32 (**9.4**)	310 (90.6)
Harmful effect of Passive Smoking	7 (2.0)	335 (98.0)
Cigarette contains Harmful Substances like Nicotine & Tar	2 (0.6)	340 (99.4)
Statutory Warning given on cigarette packets	3 (0.9)	339 (99.1)
Smoking in Public Places is illegal	3 (0.9)	339 (99.1)
Quitting smoking good for health	14 (4.1)	328 (95.9)
Pathological Changes will Reverse if Smoking Stopped	41 (**12.0**)	301 (88.0)

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Attitude: Seventeen (53.2%) want to quit smoking and 7 (2.2%) want to start smoking. For other things in attitude see table 2.

Table 2- Attitude about Smoking

Attitude	Positive Response (%)
Quit Smoking Programs will help in successfully quitting smoking	249 (72.8)
Smoking Gives Pleasurable Feeling	31 (9.1)
Smoking Relieves Stress	29 (8.5)
Smoking Increases Focus and Concentration	13 (3.8)
Smoking gives a Feeling of Relaxation	32 (9.4)

Practice: Among the smokers, 22 (78.57%, mild smokers) were smoking less than 10 cigarettes per day, 3 (17.85%, moderate smokers) were smoking 10 to 20, and 1 (3.5%) was severe smoker, smoking more than 20 cigarettes per day. Among the smokers, 22 (73.3%) were spending less than 100 rupees and 4(26.7%) were spending more than 100 rupees per day.

Eleven (3.2% of the total and 34.37% of smokers) claimed to smoke in the college campus excluding the hostel. Fifteen (4.4% of total and 46.89% of smokers) have thought of quitting smoking in the last one month and the same applies for attempt to quit in the last one year. Four (1.2% of the total and 12.5% of smokers) never share their cigarette, eight (2.3% of the total and 25% of the smokers) sometimes share their cigarette with someone else, and 20 (5.8% of the total and 62.5% of the smokers) usually share their cigarettes with their friends.

Thirteen (3.8% of the total and 40.63% of the smokers) considered themselves to be social smokers as compared to 19 (5.6% of the total and 59.37% of the smokers) considered themselves to be regular smokers. Out of 342 (100%) of the subjects, only 108 (31.6%) like to socialize or engage in activities with smokers.

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Table 3- Association of Smokers and Non-smokers with various factors (N=342)

Variables		Smoker (%)	Non-smoker (%)	χ^2	P value
Sex	Female	1 (**0.4**)	222 (99.6)	46.694	0.000
	Male	25 (**21.0**)	94 (79.0)		
Age	Young (17-20 Years)	3(**2.2**)	134(97.8)	9.532	0.002
	Older (21-26 Years)	23(**11.2**)	182(88.8)		
Smoker in the family	Yes	12 (**14.6**)	70 (85.4)	7.593	0.006
	No	14 (**5.4**)	246 (94.6)		
Relatives are Smoker	Yes	22 (**11.2**)	174 (88.8)	8.575	0.003
	No	4 (**2.7**)	142 (97.3)		
Smoker in Friend Circle	Yes	26(**14.1**)	158(85.9)	24.163	0.00
	No	0(**0.0**)	158(100)		
Smoking Program can Help Quit smoking	Yes	12 (**4.8**)	237 (95.2)	10.097	0.001
	No	14 (**15.1**)	79 (84.9)		
Smoking gives Pleasant Feeling	Yes	14 (**45.2**)	17 (54.8)	62.708	0.000
	No	12 (**3.9**)	299 (96.1)		
Smoking Relieves Stress	Yes	12 (**41.4**)	14 (58.6)	46.345	0.000
	No	14 (**4.5**)	299 (95.5)		
Smoking Increases Focus & Concentration	Yes	8(**61.5**)	5(38.5)	48.26	0.000
	No	18(**5.5**)	311(94.5)		
Smoking Gives Relaxed Feeling	Yes	20(**62.5**)	12(35.5)	142.966	0.000
	No	6(**1.9**)	304(98.1)		

Discussion

Prevalence: This study showed smoking prevalence of 7.6% total; 21.0% for male subgroup and 0.44% for females. Study by Joge et al showed a prevalence of 32.5%, which was from Maharashtra state and study by Ganesh Kumar et al in 2011 showed a

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prevalence of 22.4% from Kerala among male medical students, this can be compared with our study.[2][8]

The prevalence in girls is 0.44% and for ever-smoked the prevalence is 5.38% which reflects the change in culture that is showing up these days. We also see that 67.43% of the hostellers had tried smoking between the ages of 16-26 years. Similar findings were observed in the study of Swathy et al among medical students where prevalence of smoking among hostellers was found to be 68.27%.

Knowledge: In our study, more than 95% of the responders are strongly aware of the hazardous effects of smoking. The knowledge of awareness about sterility caused by smoking and reversal of pathological changes in 10-15 years of quitting smoking was lacking in 32 (9.4%) and 41 (12.0%) of students, respectively, was a major finding. In a study conducted by Chatterjee among medical and non-medical students of Kolkata, 98% of smokers among medical students had knowledge on the harmful effects of smoking. In a similar study by Al Haqwi et al in Riyadh, 94% of the study sample indicated that smoking could cause serious ill effects.

Practice: Most smokers were mild or moderate smokers, smoking less than 20 cigarettes a day and were spending less than Rs. 100/- per day on smoking. Unlike us, Gupta et al found that students were spending more than Rs 200/- per month.[9]

Eleven (3.2% of the total and 34.37% of smokers) claimed to smoke on the college property excluding the hostel, even though smoking is completely banned on the college property, outside the hostel. Harini Priya et al showed that approximately 47% of current smokers had smoked on college property.[10]Unlike Ganesh Kumar et al, we did not find that students from rich families are more likely to be smokers, but like them we did find those with family history of smoking are more likely to smoke.[2]

Thirteen (3.8% of the total and 40.63% of the smokers) considered themselves to be social smokers as compared to 19 (5.6% of the total and 59.37% of the smokers) considered themselves to be regular smokers. There is no student who suffers serious nicotine addiction or functional impairment, as none opted for the choice of having the need to smoke every hour.

Attitude: More than half the smokers in our study (53.2%) want to quit smoking. In Aggarwal et al, showed that 68.75% current smokers would try to quit smoking in the

future.[8] Likewise, Swathy et al found 63.13% and Joge et al observed 42.03% of their study subjects wanting to quit smoking.[7] [11]

In the present study, during one year after quitting smoking 51.5% of smokers who tried quitting, had relapse. This clearly shows that half the smokers are not happily adjusted to their smoking habit and have tried to quit. Similarly, Harini Priya et al found majority of the current consumers (60%) had attempted to quit but 56.92% had again restarted the habit of tobacco consumption.[10]

Conclusions & Recommendations

In the present study, prevalence of smoking was found to be 7.6%. Besides, it was observed that smoking habit is more among males (21% of total males). Smokers are predominantly between 21-26 years of age. It was also seen that 53.2% of smokers wanted to quit smoking. Most students started the habit of smoking between 16-20 years of age, therefore:

It is necessary to bring positive behavioural changes through adoption of comprehensive awareness programs on harmful effects of smoking among adolescent school going children.

Those who are severely addicted to smoking may be encouraged to join de-addiction programs.

Initiation of health campaigns among medical students to remind them of the hazardous effects of smoking and its addictions, with the involvement of departments of Community Medicine and Psychology is a must.

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Original Research Article

Status of Antenatal Care Practices and Place of Delivery in a Rural Community

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Abstract

OBJECTIVE: To understand antenatal care practices among pregnant women in a rural community of Karnataka. **METHODS:** A community based cross sectional study wherein 236 mothers were interviewed regarding their antenatal care practices and place of delivery within 2 weeks following the delivery. **RESULTS:** Majority of the mothers in this study area were in the age group of 21-25 years (67.8%), 32.2% mothers were illiterate. 14.4% mothers lived in nuclear families. 58.9% mothers had registered their pregnancy while only 16.6% of them had more than 3 ANC check-ups. 58.3% mothers had received 2 doses of TT injection and 15.8% mothers had not consumed IFA tablets. 59.7% mothers delivered in Government hospital, while 19.5% delivered at home. **CONCLUSION:** Pregnancy is a time of great hope and joyful anticipation. The health of the mother is of utmost importance during this time because a healthy mother will give birth to a healthy baby. In this study it was noticed that many women did not avail antenatal services and preferred to deliver at home. IEC activities should be enhanced in order to change the mindset of these people.

KEYWORDS: Antenatal care, Registration of pregnancy, Home delivery.

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INTRODUCTION

Pregnancy is a time of great hope and joyful anticipation. In any community, mother and child constitute a priority group i.e. "Vulnerable" or special risk group. They comprise approximately 70% of the population in a developing country. [(1)]

A pregnant woman should be treated with special care i.e. antenatal care which is an excellent example of preventive medicine. It

entitles the pregnant woman and her family to valuable information about her health, progress of her pregnancy and potential problems that may occur during the course of pregnancy. It also provides support to make informed decisions regarding pregnancy and delivery.

The primary aim of antenatal care is to achieve at the end of pregnancy, a healthy mother and a healthy baby. WHO has declared many World Health Day themes to emphasise the importance of a maternal and child health, the latest being in 2005 "Make every mother and child count". (2)

The essential antenatal services recommended for all pregnant women are antenatal checkups, tetanus toxoid (TT) immunization, prevention of anaemia through nutrition education and provision of iron & folic acid (IFA) tablets and institutional delivery.

National Health Policy envisages 100% antenatal coverage of pregnant women and immunization against tetanus. But in reality only 43.8% of pregnant women in India, 60.1% pregnant women in Karnataka and 27.2% pregnant women in Bijapur District receive adequate ANC check-ups. (3)

MATERIALS AND METHODS

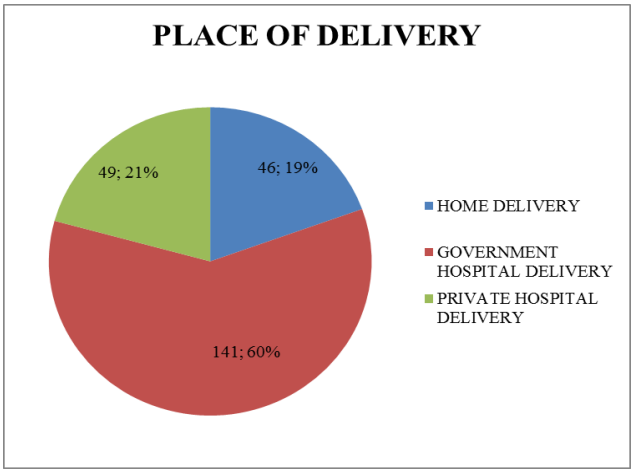
A cross-sectional study was carried out in the rural area Shivanagi, Bijapur taluk. The study was conducted for duration of one year. Ethical clearance was obtained from Institutional Ethical Committee. All mothers who delivered during that year were interviewed within 2 weeks of delivery at their home using a pre-designed, semi-open proforma. Oral informed consent was taken from all mothers. Of the 242 mothers, 236 mother's gave consent to participate in the study. Relevant information regarding socio-demographic characteristics, ANC service utilisation and place of delivery were collected. Data was compiled and analysed using SPSS v16. Chi-square test was used wherever necessary.

RESULTS

SOCIO-DEMOGRAPHIC FACTORS

In the present study, maximum mothers were in the age group of 21-25 years (67.8%), followed by ≤ 20 years (17.4%) and > 25 years (14.8%). Mean ± S.D. of mothers' age was 23.11 ± 2.78 years. Majority of the mothers (74.2%) were Hindu by religion.

FIGURE 1: Distribution of mothers based on place of delivery.



It was noted that 32.2% mothers were illiterate, 30.9% had primary level of education, 35.6%

had secondary level of education and a mere 1.3% had a bachelors degree. With regards to occupation of the mother, 53.4% were housewives and remaining worked as agriculture labourers. Regarding type of family, it was seen that half the mothers (50%) lived in joint families, 35.6% lived in three-generation families and 14.4% lived in nuclear families. Majority (52.1%) of the mothers belonged to Class III socio-economic status followed by 44.5% to Class IV and 0.8% belonged to Class V. *(Table 1)*

Out of 236 mothers, it was unfortunate to note that 7.6 % were married before attaining 15 years age, 64.4% mothers were married between 16 – 18 years of age. With regard to age at first pregnancy, 32.2% mothers were pregnant before attaining the age of 18years. Majority of mothers (75.8%) in this study were multipara.

ANC SERVICES UTILISED

Regarding registration of pregnancy, 139 (58.9%) mothers had registered their pregnancy while the remaining 97 (41.1%) had not registered their pregnancy.

Of the 139 mothers who had registered their pregnancy, 72.66% had registered in Government hospitals while remaining 27.34% had registered in Private hospitals. *(Table 2)*

The first contact of the pregnant woman with the health professional is most essential and should occur at the earliest. It is during this first contact that a woman registers her pregnancy and avails ANC services. Of 236 mothers interviewed, 139 (58.9%) had registered their pregnancy and availed ANC services. Of these 139 mothers, 26.6% had only 1 ANC check-up, 56.8% had 2 -3 ANC check-ups, while only 16.6% had more than 3 ANC check-ups. 36.7% mothers had their first ANC check-up between 0 – 12 weeks, 46% mothers had between 12 – 20 weeks of gestation, while the remaining 17.3% mothers had their first ANC check-up between 20 – 28 weeks of gestation. With regards to TT injection, 58.3% mothers had received 2 doses of TT injection while 41.72% mothers had received only 1 dose. 15.8% mothers had not consumed IFA tablets during antenatal period inspite of availing ANC check-up, 7.2% mothers had consumed 30 IFA tablets, while only 1.4% mothers had consumed more than 90 tablets. Blood examination was done for 89.9% women while urine examination was done for 81.3% women. *(Table 3)*

Regarding place of delivery, of 236 mothers 59.7% mothers delivered in Government hospital, 20.8% delivered in Private hospitals while remaining 19.5% delivered at home *(Figure 1)*. 190 (80.5%) hospital deliveries were conducted by a doctor. Home deliveries were mainly conducted by dai (17.4%) while 2.1% deliveries were conducted by a relative.

Socio-economic status is an indicator for social position reflecting different aspects of cultural, material possessions, income and participation in activities of the community. The influence of

TABLE 1: DISTRIBUTION OF MOTHERS BASED ON SOCIO-DEMOGRAPHIC FACTORS.

SOCIO-DEMOGRAPHIC FACTORS		FREQUENCY (n = 236)	PERCENT
AGE	≤ 20 21-25 26-30	41 160 35	17.4 67.8 14.8
RELIGION	Hindu Muslim	175 61	74.2 25.8
EDUCATION STATUS	Illiterate Primary Secondary Bachelor's Degree	76 73 84 3	32.2 30.9 35.6 1.3
OCCUPATION	Agriculture labourer Housewife	110 126	46.6 53.4
TYPE OF FAMILY	Nuclear Joint Three generation	34 118 84	14.4 50.0 35.6
SOCIO-ECONOMIC STATUS	Class II Class III Class IV Class V	6 123 105 2	2.5 52.2 44.5 0.8

*None of the families belonged to Class I socio-economic status.

TABLE 2: DISTRIBUTION OF WOMEN BASED ON REGISTRATION OF PREGNANCY.

REGISTRATION OF PREGNANCY		FREQUENCY (n = 236)	PERCENT
REGISTRATION OF PREGNANCY	Yes	139	58.9
	No	97	41.1
PLACE OF REGISTRATION (n = 139)	Government hospital Private hospital	101 38	72.66 27.34

TABLE 3: DISTRIBUTION OF WOMEN BASED ON ANC SERVICES RECEIVED.

ANC SERVICES RECEIVED		FREQUENCY (n = 139)	PERCENT
NO. OF ANC CHECK-UPS	1 check up 2-3 check up > 3 check up	37 79 23	26.6 56.8 16.6
TIMING OF FIRST ANC CHECK-UPS	0-12 wks 12-20 wks 20-28 wks	51 64 24	36.7 46 17.3
NO. OF TT DOSES	1 dose 2 doses	58 81	41.72 58.3
NO. OF IFA TABLETS	Not taken 30 tablets 60 tablets 90 tablets > tablets90	22 10 60 45 2	15.8 7.2 43.2 32.4 1.4
BLOOD EXAMINATION	Yes No	125 14	89.9 10.1
URINE EXAMINATION	Yes No	113 26	81.3 18.7

TABLE 4: RELATIONSHIP BETWEEN SOCIO-ECONOMIC STATUS, REGISTRATION OF PREGNANCY AND PLACE OF DELIVERY.

		SOCIO-ECONOMIC STATUS			P
		MIDDLE CLASS (Class II & Class III)	LOWER CLASS (Class IV & Class V)	Total	
REGISTRATION OF PREGNANCY	Yes	94 (72.8)	45 (42.1)	139	< 0.001*
	No	35 (27.2)	62 (57.9)	97	
PLACE OF DELIVERY	Home Delivery	12 (9.7)	34 (31.8)	46	< 0.001*
	Govt. Hospital	83 (64.3)	58 (54.2)	141	
	Private Hospital	34 (26.4)	15 (14)	49	
	TOTAL	129 (100)	107 (100)	236	

 # None of the mothers belonged to Upper class (Class I)

**SIGNIFICANT*

socio-economic status of these families on utilisation of ANC services was elicited. It was evident that of the 129 mothers belonging to middle class majority (72.8%) had registered their pregnancy while of the 107 mothers belonging to lower class only 42.1% mothers had registered their pregnancy. This implies that higher the socio-economic class of the mother, higher is the practice of registration of pregnancy and this association was statistically significant.

Majority of the mothers (90.7%) belonging to middle class chose to deliver in an institution while only 68.2% mothers belonging to lower class chose to deliver in an institution. This shows that institutional delivery is more commonly practiced among women of higher socio-economic class. The relationship between socio-economic status of the mother and place of delivery was statistically significant. *(Table 4)*

DISCUSSION

This study was conducted in a rural area of Bijapur taluk. 236 mothers were interviewed to elicit the trends in ANC service utilisation and place of delivery. It was noted that 72% women were married before attaining 18 years of age. 32.2% women had their first pregnancy before attaining 18 years of age. This can be attributed to prevalence of traditional practices of early marriage in this area. Majority of these women belong to joint or three-generation families wherein traditional practices are emphasised and children especially girl child is considered a liability. They are compelled to drop out of school, work and early marriage ensues. NFHS-3 report states that early marriage among women is quite prevalent in Karnataka as is evident from the fact that 42 percent of women aged 20-24 were married before attaining 18years age and 21% women begin childbearing before 18years of age. [(4)]

139 (58%) mothers had registered their pregnancy of whom, 72.6% mothers had registered in a Government hospital. This shows that majority of the people in rural areas rely on Government services. It is essential to improve the quality of health care provided at these rural health centres in order to uphold the trust of people. This practice of registration is low compared to studies done in Jammu (98.4%) [(5)] and Chandigarh (92.6%).[(6)]

Only 16.6% mothers had more than 3 ANC check-ups. According to NFHS II only 27.2% women in Bijapur district receive more than 3 ANC check ups.[(3)] The disparity between this NFHS II report and our study can be attributed to the fact that Bijapur district comprises both urban and rural areas but our study depicts findings only from a rural area of Bijapur district. Also people in rural areas are economically poor and migration in search of work is a common phenomenon.

During their antenatal period 58.3% mothers had received 2 doses of TT injection and 19.9% mothers had consumed 90 or more IFA tablets. These findings are low compared to NFHS-3 Karnataka report (79% and 39%)[4] and studies done in Jammu (94.4% and 48% respectively), [5] Chandigarh (91.2% and 90.4% respectively). [6] It was disheartening to note that inspite of being registered and availing atleast 1 ANC check-up, 22 women had not consumed IFA tablets. Some of the reasons cited were severe abdominal pain and difficult delivery during previous pregnancy, bad experiences by other women in the community and family pressure.

In our study area it was observed that practice of registration of pregnancy was higher among those mothers who were literates and those belonging to higher socio-economic class. Similar findings have been reported in other studies. [5]

Education status of mother was neither significantly associated with no. of antenatal visits nor place of delivery. Socio-economic status of mother was significantly associated with no. of antenatal visits and place of delivery. Such findings clearly indicate the urgent need to improve the socio-economic status and living standards of the community. Providing free education and food at subsidised rates are not the solution to poverty. It is only the initial step taken towards poverty eradication. Fruitful results will be seen only when unemployment is eradicated. People with salaried employment will lead a more secured life. Money and food obtained as a result of hard work is far more valuable.

In our study it was found that home deliveries were significantly more common in three generation and joint families compared to nuclear families. Reason for more institutional delivery among nuclear families may be due to reason that nobody will be present at home to assist delivery or care for mother and neonate. Three-generation and joint families are deeply influenced by the elders in the family who follow traditional practices which may be a reason for increased home deliveries among these families.

CONCLUSION AND RECOMMENDATION

Pregnancy and childbirth are special events in a woman's lives and indeed in the lives of their families. Nearly 60% of mothers in our study had registered their pregnancy and of them only 17% had more than 3 antenatal visits. Only 19.9% mothers have consumed 90 or more IFA tablets. There is an urgent need to strengthen ANC services provided by health workers. It is heartening to note that about 80% of rural women had opted for institutional delivery. IEC activities regarding enhancing age at marriage, registration of pregnancy, utilisation of services, institutional delivery should be conducted. Regular re-orientation of health care facilitators regarding antenatal services should be conducted. Encouraging and building the

morale of health workers by means of verbal appreciation, issue of certificates or monetary benefits to be done once a year at PHC level.

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