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Original research article

Is it debilitated to be parent of medical student: an epidemiological study on morbidity profile and risk factors

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Abstract

Background: Noncommunicable diseases (NCDs) are the leading cause of death globally, and one of the major health challenges of the 21st century. Understanding the burden of morbidities and associated risk factors can help the policy makers to plan health programmes. The present study was carried out with the objective to study morbidity profile and risk factors of parents of medical students joined at a government medical college, Andhra Pradesh.

Materials and Methods: A cross sectional study was carried out where 398 study participants aged above 30 years were included. The study subjects were interviewed and examined. The collected information was recorded on a pre-designed, pretested, semi structured questionnaire. Morbidity was assessed by taking history, doing a clinical examination, reviewing past medical records and medicines taken by the study subject. Data was analysed using statistical package for Social sciences version 21. Data entry was done using Microsoft Excel 2013 version.

Results: The mean age of the study participants were 47.52±5.16 years. Mean monthly family Income = 89,796.2 ± 84883.69 rupees. Prevalence of any form of morbidity in the present study is 31.4%. The socio demographic factors that are associated with morbidity of elderly, it was observed that morbidity are observed to be associated with age, income, Male gender (OR=1.60, p=0.02*), ration card (OR=0.57, p=0.01*), smoking habit (OR=1.60; p=0.02*) and alcoholism (OR=9.26; p=0.002*). In the present study, 16.8% of the subjects had hypertension. 16.3% had diabetes. 4% had thyroid issues. 0.5% had anaemia. 1% had COPD. 1.5% had cardiovascular disease. 0.3% had seizures. 0.8% had rheumatoid arthritis. 0.3% had varicose veins.

Conclusion: The present study observed 31.4% with Co-morbidities. It is observed that age, Income, male gender, Ration card, Smoking and Alcoholism were significant risk factors for co morbidities in the present study. So, awareness among elderly people should be created regarding cessation of smoking and reducing or quitting alcohol intake to reduce the burden of NCDs. More focus should be placed on early detection through screening by conducting visits to each household to accurately represent the actual prevalence of the illness.

Keywords: Morbidity profile, NCDS, medical students

Introduction

Noncommunicable diseases (NCDs) are the leading cause of death globally, and one of the major health challenges of the 21st century. In September 2011, at the United Nations General Assembly in New York, a political declaration was made to strengthen global and national responses to prevent and control NCDs. [1] As part of the declaration, WHO was given a leadership role, and subsequently established the WHO Global Action Plan for the Prevention and Control of NCDs 2013–2020 (Global NCD Action Plan) adopted by the World Health Assembly in 2013 [1, 3]. The Global NCD Action Plan included a global monitoring framework and nine voluntary global targets to be attained by 2025 [2].

In response to the "WHO Global Action Plan for the Prevention and Control of NCDs 2013-2020", India is the first country to adopt the National Action Plan with specific national targets and indicators aimed at reducing the number of global premature deaths from NCDs by 25% by 2025. India's National Monitoring Framework for Prevention and Control of NCDs has committed for a 50% relative reduction in household use of solid fuel and a 30% relative reduction in prevalence of current tobacco use by 2025 [4].

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Over the next four decades, India's demographic structure is also expected to shift dramatically from a young to an aging population resulting in 316 million elderly persons by 2050 [5]. The percentage of the elderly population in India increased from 5.4 per cent in 1950 to 6.1 per cent in 1990 and is expected to be about 8.7 per cent in 2015, 11.1 per cent in 2025, 12.4 per cent in 2030 and 19.6 per cent in 2050 [6]. Several forces are driving India's changing age structure, including an upward trend in life expectancy and falling fertility.

To formulate policies and programmes and for them to function effectively, good approximate measure of morbidity status of elderly should be studied which will provide with such information that are lacking [7]. So, based on above facts the present study was carried out with the objective to study morbidity profile and risk factors of parents of medical students joined at a government medical college, Andhra Pradesh.

Aim and Objectives of the Study

1. To study the morbidity profile of parents of medical students.
2. To study the risk factors associated with non communicable diseases.

Materials and Methods

The present study is a cross sectional study carried out at a government Medical College Andhra Pradesh where parents of students joined in undergraduate medical course were included as the study participants after taking informed consent. Study participants whose Age >35 years and gave consent to participate in the study were included. Those with hostile behaviour and didn't give consent to participate in the study were excluded from the study.

Sampel size for the study was estimated based on the prevalence of Diabetes in India to be 10.5% [8]. Using this statistic, at 95% Confidence interval and an absolute precision of 6%, the sample size was estimated to be 398.

The study subjects were interviewed and examined. The collected information was recorded on a pre-designed, pretested, semi structured questionnaire. Morbidity was assessed by taking history, doing a clinical examination, reviewing past medical records and medicines taken by the study subject.

Data was analysed using statistical package for Social sciences version 21. Data entry was done using Microsoft Excel 2013 version. Qualitative Data was represented in frequencies and percentages, and quantitative data was represented in Mean and standard deviation. Parametric statistical tests include test was used and non parametric test include chi square test was used to find the statistical significance. Strength of association between risk factor and the outcome was calculated using univariate logistic regression analysis. P value of <0.05 was considered statistically significant.

Results

A total of 398 participants were interviewed. The mean age of the study participants were 47.52±5.16 years. Majority of the participants belong to 41 to 50 years age group (64.3%) followed by 51 to 60 years age group (24.6%). In the conducted study, the male population accounted for 49.5% while the female population accounted for 50.5%. The distribution of individuals based on their socio-economic status revealed that 82.7% were APL families, whereas 17.3% were BPL families. Furthermore, the study also explored the participants' religious affiliations, with 79.6% identifying as Hindu, 13.1% as Christian, and 7.3% as Muslim. (Table 1)

Table 1: Socio demographic profile of the study participants

	Frequency (n=398)	Percentage
Age distribution		
31 – 40	42	10.6
41 – 50	256	64.3
51 – 60	98	24.6
61 – 70	2	0.5
Socio Economic status		
APL	329	82.7
BPL	69	17.3
Gender		
Female	201	50.5
Male	197	49.5
Religion		
Hindu	317	79.6
Christian	52	13.1
Muslim	29	7.3
Education		
Graduate or Postgraduate	275	69
Intermediate	40	10.1

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High School	47	11.8
Middle School	7	1.8
Primary School	18	4.5
Illiterate	11	2.8
Occupation		
Professional	103	25.9
Semi-professional	64	16.1
Clerical, shop-owner/farm	31	7.8
Skilled worker	24	6
Semi-skilled worker	22	5.5
Unskilled worker	12	3
Unemployed	142	35.7
Comorbidities		
Yes	125	31.4
No	273	68.6
Total	398	100
Mean age = 47.5±5.16 years		
Mean monthly family Income = 89,796.2±84883.69 rupee		

In terms of housing standards, it was found that all participants resided in Pakka houses. The distribution of the number of rooms per house indicated that 36.9% had less than 2 rooms, 56.5% had 4-6 rooms, and 6.5% had 7-9 rooms. It is worth noting that 44% of the study participants did not possess any health insurance. The average size of the families involved in the study was determined to be 4.26±0.82 members. Additionally, overcrowding was observed in 18.3% of the houses. The distribution based on education revealed that 69% of the participants were graduates or postgraduates, 10.1% had completed intermediate studies, 11.8% had completed high school, 1.8% had attended middle school, 4.5% had received primary education, and 2.8% were illiterate. In terms of occupation, 25.9% were engaged in professional work, 16.1% in semi-professional work, 7.8% as clerks, shopkeepers, or farmworkers, 6% in skilled work, 5.5% in semi-skilled work, and 3% in unskilled work. Additionally, 35.7% of the participants were unemployed. The Mean monthly family Income = 89,796.2±84883.69 rupees. (Table 1)
In the study 4.5% were smokers and 2.5% were alcoholics
Prevalence of any form of morbidity in the present study is 31.4%. Hypertension accounted for 16.8% of the cases among the subjects. This was followed by diabetes, which accounted for 16.3% of the cases. Thyroid issues were found in 4% of the individuals, while anaemia was present in 0.5% of the population. Chronic obstructive pulmonary disease (COPD) was detected in 1% of the subjects, whereas cardiovascular disease was identified in 1.5% of the participants. Seizures were recorded in 0.3% of the individuals, with rheumatoid arthritis affecting 0.8% of the subjects. Lastly, varicose veins were observed in 0.3% of the population. (Table 2)

Table 2: Distribution based on Morbidity profile

	Frequency	**Percentage**
Anemia	2	0.5%
Asthma	1	0.3%
COPD	4	1.0%
CVD	6	1.5%
Varicose	1	0.3%
Diabetes	65	16.3%
HTN	67	16.8%
RA	3	0.8%
Thyroid	16	4.0%
Seizures	1	0.3%
No morbidity	273	68.6%

When analysing the socio demographic factors that are associated with morbidity of elderly, it was observed that morbidity are observed to be associated with age, income, Male gender (OR=1.60, p=0.02*), ration card (OR=0.57,p=0.01*), smoking habit (OR=1.60;p=0.02*) and alcoholism (OR=9.26;p=0.002*). (Table 3)

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Table 3: Association of Socio demographic profile with morbidity profile

		Comorbidities		OR	P value
		Yes	No		
Age		48.66±5.81	47.0±4.75	-	0.002*
No of rooms		4.28±1.51	47.0±4.75	-	0.19
Total family number		4.24±0.79	47.0±4.75	-	0.73
Income		109203.70±90192.11	70621.35±80554.46	-	0.03*
Gender	Male	72	125	1.60 (1.04 - 2.46)	0.02*
	Female	53	148		
SES	APL	108	221	1.49 (0.82 - 2.70)	0.18
	BPL	17	52		
Ration card	Yes	33	105	0.57 (0.36 - 0.91)	0.01*
	No	92	168		
Smoking	Yes	10	14	1.60 (0.69 - 3.72)	0.02*
	No	115	259		
Alcohol	Yes	8	2	9.26 (1.93 - 44.29)	0.002*
	No	117	271		
Overcrowding	Yes	19	54	0.72 (0.41 - 1.28)	0.27
	No	106	219		

Discussion

In the present study, Prevalence of any form of morbidity in the present study is 31.4%. The mean age of those with co-morbidities was 48.66±5.81 years and those without co morbidities was 47.0±4.75 years. Our study observed that morbidities are associated with increasing age. Similar findings were observed by Alwazan A *et al* [9] where age of 40 and more frequently after the age of 50, indicating that increasing age is associated with non-communicable diseases. Nadia *et al* [10] observed that incidence of non-communicable diseases (NCD) in relation to increasing age. It shows that the prevalence of overweight, obesity, hyperlipidemia, hypertension, diabetes, and heart disease increases with age. Kaur G *et al* [11] observed a prevalence of morbidity among elderly population to be 87.6%. Two previous studies done in the United States, documented that the prevalence of morbidity was 87.6% and 82.0% respectively [12, 13]. Similar findings were found in a study conducted by Medhi *et al* [14] and by Joshi *et al*. [15] in North India, where it was observed that as age advanced, there was a significant increase in the morbidity among the elderly.

In the present study, 16.8% of the subjects had hypertension. 16.3% had diabetes. 4% had thyroid issues. 0.5% had anaemia. 1% had COPD. 1.5% had cardiovascular disease. 0.3% had seizures. 0.8% had rheumatoid arthritis. 0.3% had varicose veins.

In Usha P *et al* [16] study majority belonged to lower middle class (52.0%) followed by 27.5% in middle class, 16.3% in lower class, 4.0% in upper middle class, and only 0.3% in upper class. Similar findings were shown by Pandve H T, *et al*. [11] (2010) at Pune.

In the Usha P *et al* [16] study chronic morbidity was more among illiterate (98.2%) participants which was not significant and significantly more among unemployed (99.5%) and financially dependent elderlies (99.2%). Almost similar results were shown by Bartwal j, *et al*. [12] (2016) in Nainital, Uttarakhand.

Usha P *et al* [16] found that most common health system involved was musculoskeletal (77.20%). Other commonly involved health systems were psychological (75.90%), digestive (73.60%), eye (56.67%), endocrine (35.90%), cardiovascular (33.08%), general and unspecified health problems (32.05%), ear (24.62%) and respiratory (19.74%). Very few elderlies had neurological (6.67%) and urological (1.28%) problems.

Verma V, *et al* [17] (2016) Allahabad where they found involvement of musculoskeletal system (68.5%) was most common and other commonly involved health systems were psychological (59.75%), digestive (29.75%), ear (13%), respiratory (11.25%).

Chauhan P, *et al*. [18] (2013) at Nellore also did a study among geriatric people and found involvement of musculoskeletal system (69.7%), digestive (16.2%) cardiovascular (38.3%) respiratory (26.9%), neurological (6.2%), psychological (12.8%) and urogenital (5.7%).

Conclusion

The present study observed 31.4% with Co-morbidities. It is observed that age, Income, male gender, Ration card, Smoking and Alcoholism were significant risk factors for co morbidities in the present study. So, awareness among elderly people should be created regarding cessation of smoking and reducing or quitting alcohol intake to reduce the burden of NCDs. Regular medical check‑ups in community as well as in all the OPDs especially at PHCs should be done to ensure prevention and early detection of the health problems as geriatric population requires special attention in every aspect. Effort should be made to make services available, affordable, and accessible. Involvement of NGOs and voluntary organizations should be included.

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