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Awareness Of Non-Communicable Diseases In Rural And Urban Communities Around Guntur City Of Andhra Pradesh

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Abstract
Introduction: *The important modifiable behavioural risk factors for NCDs are tobacco use, physical inactivity, unhealthy diet and harmful use of alcohol. To reduce the burden of NCDs there is a need for awareness of the above, behavioural change and knowledge for early healthcare seeking. This study is set to identify and compare the awareness of NCDs in rural and urban adults.*
Methodology: *This is a descriptive cross-sectional study involving a convenient sample of 100 adults each (aged between 30 to 45 years) attending the Rural Health Center and Urban Health Center of a medical college. Using a predetermined questionnaire, an overall awareness score was obtained for each participant. Findings were subjected to tests of significance like chi square and t test at 5% Level of Significance.*
Results: *The mean knowledge score regarding NCDs in the rural members was 4.06 and that of the urban members was 6.66 (t statistic – 12.68, p value < 0.00001). While health care utilisation in urban areas was 58.3% in private sector and 41.7% in public sector, in rural areas it was 100 % in private sector. Medical and Govt. health personnel as sources of information was found to be very limited.*
Discussion: *Significant differences in both knowledge and awareness between rural and urban participants are noted. Better lifestyle practices are also based on place of residence.*
Conclusion: *As urban / rural divide in India is being bridged rapidly, NCD risks are becoming equal. Awareness and behaviour change are important aspects of any NCD control programme.*
Keywords: *Life style diseases, NCDs, Risk factors, Behaviour change. Urban, Rural*

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I. Introduction:

The total disease burden in India has increased in all the States due to the contribution of major Non-Communicable Diseases (NCD**)** like cardiovascular diseases, diabetes, chronic respiratory diseases, mental health and neurological disorders, musculoskeletal disorders, cancers, and chronic kidney disease [1]. In India, the incidence of diabetes, mainly Type 2 or Maturity onset Diabetes Mellites, in India reached 9.6% in the year 2021[2]. The proportion of deaths due to NCDs in India have increased to 61.8%, the major ones being cardiovascular diseases (CVDs), Type 2 diabetes, cancers and chronic respiratory diseases (CRDs) all sharing the same four behavioral risk factors i.e., unhealthy diet, lack of physical activity, use of tobacco and alcohol [3].

Under the National Health Mission (NHM), a population-based initiatives for prevention, control and screening for common NCDs i.e., diabetes, hypertension and common cancers have been initiated. NCDs are a good example of the iceberg phenomenon as they remain silent during the clinical course. A lack of adequate knowledge about complications and the method of control of these illnesses contributes to a large percentage of undetected and untreated subjects in the community. Though most people in the country consider these diseases as serious and also that are the result of poor lifestyles, there exist lacunae in knowledge about the role of risk factors and essential disease management issues [4].

The process of community participation includes peoples' involvement not only in a discussion about health, the prevention of disease, identification of appropriate health services to address their defined healthcare needs but also in the delivery of the same in an efficient and efficacious manner. When knowledge and awareness about NCDs in the community is optimum, the numbers affected and the subsequent suffering maybe significantly reduced [5]. The primary prevention of NCDs is directed towards four associated modifiable behavioural risk factors which are tobacco use, physical inactivity, unhealthy diet and harmful use of alcohol. Lifestyle transformation in response to rapid urbanisation, changes in dietary habits, increasing stress related to social changes, breakdown of social structures etc. are predisposing our people to various behavioral and biological risk factors for NCDs [6]. Children today are exposed to a milieu of junk foods and sedentary patterns that encourage obesity and makes them increasingly at risk for lifestyle related diseases. Key risk factors also include the explosion of calorie rich

foods in terms of variety, availability and affordability, the aggressive marketing strategies and increased screen time [7].

To reduce the burden of NCDs in terms of morbidity and mortality in the country, there is a need for improving awareness and knowledge of the risk factors, preventive measures, early health seeking for detection and treatment. This study is therefore set to identify and compare the awareness of NCDs in rural and urban adults in relation to various demographic and socio -economic variables

II. Methodology:

This is a descriptive cross-sectional study done over a period of 2 months involving out patients attending the Rural Health Center (RHC) and Urban Health Center (UHC) of a medical college. A total of 100 adults (aged between 30 to 45 years) each from the urban and rural centers, coming from the respective catchment areas, were selected by convenient sampling. A predetermined and tested questionnaire including socio - demographic variables and awareness questions was administered after taking informed consent and Institutional Ethics Committee (IEC) clearance. Awareness questions were assigned scores and an overall awareness score was obtained for each participant. Data was entered in MS Excel and presented as tables in percentages. Important findings were subjected to tests of significance like chi square and t test at 5% Level of Significance.

III. Results:

The sample population were 100 people attending the UHC (men 41 and women 59) and 100 people from the RHC (men 30 and women 70). Table 1 shows the demographic profile of the participants. The questions asked were about the common lifestyle diseases and also how to prevent them. As seen in Table 2, the correct answers given by the urban people were more and the difference is statistically significant. Lifestyle related practices also showed significant differences between rural and urban participants. (Table 3)

Equal scores were allotted to each of the questions and the mean scores on comparison with the demographic characteristics of the participants showed significant differences (Table 4). The mean knowledge score regarding NCDs in the rural members was 4.06 and that of the urban members was 6.66 (t statistic – 12.68, p value < 0.00001). 38.6% rural women and 30.5% urban women were suffering with NCDs. 16.7% rural men and 19.5% urban men had NCDs. The differences seen are however not statistically significant.

The common NCDS are Diabetes Mellites Type 2, Hypertensive heart disease, both together, Coronary heart disease, Cerebro-Vascular accidents and Hypothyroidism. Health care utilisation in rural areas for life style diseases was 100 % in private sector and nil in public sector. In urban areas, health seeking for life style diseases was 58.3% in private sector and 41.7% in public sector. Source of information about NCDs was mostly friends, relatives and mobile phones with medical personnel and Govt sources being limited.

IV. Discussion:

The major NCDs share four behavioral risk factors - unhealthy diet, lack of physical activity, and use of tobacco and alcohol [8]. The term ‘knowledge’ may refer to factual and complete information about health conditions as against ‘awareness’ which may comprise the information that is personally relevant to an individual [9]. According to McCallum et al a continuum of knowledge may be represented by General Awareness Knowledge (GAK) on one end and Detailed and Specific Knowledge (DSK) on the other end [10]. Good knowledge on health, requires a theoretical and objective understanding about health promotion and disease prevention regarding specific illnesses, which in turn can help people to protect their health [11]. In the current study it is seen that there is significant difference in both knowledge and awareness between rural and urban participants. Similarly, a difference is also seen in better lifestyle practices according to place of residence.

Perceptions and knowledge about non-communicable diseases influence people's behaviour toward health. Better risk perception of individuals towards NCDs in terms of their health history and demographic characteristics will help not only in targeting interventions but also in the adoption of preventive practices. Jane Ling MY et al in their study on risk perception of NCDs, identified personal lifestyle factors and also demographic factors such as gender, age, ethnicity, religion, education level, income and marital status [12]. The causes of NCDs are multifactorial and include unhealthy behaviours such as physical inactivity, tobacco use, alcohol abuse, and high-fat, low-fiber, high-sugar diets. An emphasis on providing a better knowledge and perceptions of risk factors for NCDs in people dependent on the public health sector, will see better NCD management in such clinical settings both in urban and rural areas. Such literature on NCDs in the public sector healthcare however continues to be meager. It may be expected that when individuals understand the risk of the disease and are aware of the solutions to alleviate it, positive behavior change will follow [13].

The Health Belief Model (HBM), a behavioral change theory, satisfactorily forecasts change in an individual’s behaviour based on six constructs, namely, perceived susceptibility, perceived severity, perceived benefits, perceived barriers, cues to action and self-efficacy. Wang T et al suggest that an individual is more likely to take action to prevent NCDs, if he perceives himself as susceptible to NCDs (perceived susceptibility), believes

NCDs would have potentially serious consequences (perceived severity), deems healthy behaviors could reduce the susceptibility or severity (perceived benefit), feels able to adopt healthy behaviors (perceived barriers) and believes that he is competent to adopt the necessary behaviors (self-efficacy) [14]. Alarming an individual about the possible severity of illness is not as effective as helping one to identify the barriers which are preventing the adoption of healthy behaviours and to recognize the benefits of following the same. There is an urgent need to educate people to modify unhealthy behaviors for the prevention of NCDs not only about smoking and heavy alcohol intake but also on changing sedentary living.

In a study done in Malaysia by Muslimah I et al, it was reported that though more than half of both urban and rural respondents showed good knowledge about NCDs, the corresponding attitude and practices were unsatisfactory, particularly among urban respondents [15].

Health systems around the world, especially in developing countries, cater to acute care and are not oriented towards the requirements for the needs of chronic disease care. NCDs require health systems to provide long term, comprehensive, integrated and sustained care [16]. NCD interventions may be population-based which address the various risk factors and individual-based which are addressed in the health care setting especially primary care. NCD care models must have the scope to integrate both the above by targeting risk factors in the population as well providing care for the individual [17]. Berger O et al found that whatever be their knowledge at the start, most patients develop a higher and satisfactory level of knowledge and perception about their disease and interventions throughout their treatment period through their health care provider [18].

Knowledge and information alone do not drive behaviour and it is not possible to predict accurately which patient will change his / her behaviour as it is not a matter of simple common sense or getting the message across. Change in behaviour is difficult and requires sustained motivation and support. While some people act rationally in the face of specific information, others may not, due to their own peculiar but relevant reasons. Identifying the ways to changing behaviour in people suffering with NCDs requires the study of Health Psychology [19]. Human behaviour is the result of a complex interaction between habit, instinctive responses to the social and cultural environment both immediate and wide and also a sensible and calculated choice [20].

V. Conclusion:

Behaviour change communication (BCC) is an important strategy for modification of behavioral or lifestyle-associated risk factors of NCDs.This requires improved knowledge, attitudes and behaviors. As rural and urban divides become obliterated, NCDs are becoming more prevalent in rural areas too. Awareness thus becomes an important aspect of any NCD programme.

Health educators should help individuals to build up the confidence, and convince them that unhealthy behaviors can be changed by making efforts. While identifying and popularizing successful behavior change practices in the country, health educators can use these local narratives to encourage people to overcome unhealthy behaviors and accept healthy ones. Providing information about healthy behavior through various formats of public media can contribute to behavior change [14].

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Table 1 - Profile of study participants

S. No.	Profile of study participants	Urban (n=100)	Rural (n=100)
1	No. of women in the sample	59	70
2	Family type - Nuclear	67	71
3	Education in men - Middle school & less	14	15
4	Education in women - Middle school & less	31	42
5	Socio economic scale - Lower	38	70
6	Unemployed women	25	32

Table 2 - Questions regarding knowledge about NCDs according to residence

S. No.	Knowledge questions about NCD	Total Correct (n=200) (%)	Rural (n=100) (%)	Urban (n=100)	Chi Square	p value
1	Mentioned symptoms of Diabetes Mellites	109 (54.5)	47	62	4.53	0.03*
2	Mentioned symptoms of Hypertension	138 (69.0)	60	78	7.57	0.006**
3	Mentioned symptoms of Stroke	12 (6.0)	12	26	6.37	0.01*
4	Mentioned symptoms of coronary heart disease	154 (77.0)	54	95	44.24	<0.0001***
5	NCDs can affect at any age	53 (26.5)	32	47	12.65	0.0004***
6	NCDs can be prevented	191 (95.5)	91	95	1.23	0.27
7	Mentioned one method of prevention of NCDs	157 (78.5)	58	95	38.08	<0.0001***
8	Mentioned second method of prevention of NCDs	124 (62.5)	32	92	76.4	<0.0001***
9	Mentioned third method of prevention NCDs	20 (10.5)	17	59	37.44	<0.0002***
10	Mentioned fourth method of prevention NCDs	3 (1.5)	5	11	2.45	0.12
Difference - * significant, ** moderately significant, *** highly significant						

Table 3 - Lifestyle related practices according to residence

S. No	Practices	Rural (n = 100)	Urban (n=100)	Chi Square	p value
1	Fresh Vegetables intake daily	94	73	16.0	0.0006***
2	Fruit intake daily	40	28	3.21	0.7
3	Whole grains intake	20	45	14.24	0.0002***
4	Diseases mentioned > 2	13	95	135.34	0.00001***
5	List of avoidable behaviors (other than smoking & alcohol)	11	27	8.32	0.004**
6	Eating junk food and eating out	46	69	7.11	0.008**
7	Exercise daily for 1 hour	27	12	7.17	0.007**
8	Salt (mean intake in gms per capita)	8.9 gms	10.2 gms	t stat - 2.12	0.03*

9	Oil (mean intake in ml per capita)	32.9 ml	37.1 ml	t stat - 3.1	0.002**
Difference - * significant, ** moderately significant, *** highly significant					

Table 4: Distribution of Knowledge scores according to demographic characteristics

S. No	Demographic characteristics	< mean score (n=105) (%)	> mean score (n=95) (%)	Chi Square	p value
1	Gender - Male (n=71)	34 (32.4)	37 (38.9)	0.94	0.33
	Gender - Female (n= 129)	71 (67.6)	58 (61.1)		
2	Residence - Rural (n=100)	64 (61.0)	36 (37.9)	10.6	0.001**
	Residence - Urban (n=100)	41 (39.0)	59 (62.1)		
3	Education - Middle school & below (n=102)	64 (61.0)	38 (40.0)	8.76	0.003**
4	Employment - Unorganised sector (n=135)	80 (76.2)	55 (57.9)	7.61	0.006*
5	Caste SC, ST (n = 66)	39 (37.1)	27 (28.4)	1.72	0.19
6	Type of family - Nuclear (n=138)	81 (77.1)	57 (60.0)	6.85	0.009**
7	SES - Lower (n=108)	60 (57.1)	48 (50.5)	0.88	0.35
Difference - * significant, ** moderately significant, *** highly significant					