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The study on communicable and non-communicable diseases among the people residing near garbage houses in Kanpur City

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Abstract

Community education to promote health related behavior change increasing the resistance of the human host to infection, through vaccination and nutritional support. Vaccination provision of clean drinking water and improve sanitation the promotion of personal hygiene (particularly the importance of hand washing with soap or sanitize) proper wearing mask, help control communicable disease. Prevent all kinds of addiction (tobacco, alcohol smoking). It is helping to decrease the non-communicable disease. Lifestyle and metabolic changes are other causes of non-communicable disease. Garbage collection also affects human health. Garbage in developing many viruses, bacteria and mosquitoes can cause malaria, dengue, typhoid, heart disease etc. Nutritional status was very poor compared to recommended dietary allowance to all nutrients, energy, protein, fat, vitamins, minerals. They were main reason of lower nutritional status poverty, lack of education and awareness. Communicable diseases had more found comparison to non-communicable diseases and some people had found both communicable and non-communicable diseases in the study area.

Keywords: Communicable and non-communicable diseases, garbage index, nutritional status

Introduction

The term communicable disease is the ability of an organism to enter, survive and multiply in the host, while the infectiousness of a disease indicates the comparative ease with which the disease is transmitted to other hosts. Transmission of pathogen can occur in various ways including physical contact, contaminated food, body fluids, objects, airborne inhalation, or through vector organisms. Infectious diseases are sometimes called contagious when they are easily transmitted by contact with an ill person or their secretions (e.g., influenza). Thus, a contagious disease is a subset of infectious disease that is especially infective or easily transmitted. Other types of infectious/transmissible/communicable diseases with more specialized routes of infection, such as vector transmission or sexual transmission, are usually not regarded as contagious, and often do not require medical isolation (sometimes loosely called quarantine) of victims. However, this specialized connotation of the word contagious and contagious disease (easy transmissibility) is not always respected in popular use (Mc Graw Hill, 2004).

India's burden of non-communicable disease is escalating. It is typically present in individuals aged 55 years or older in many developed countries, but their onset occurs in India a decade earlier (≥ 45 years of age). Exacerbating this problem

are the issues of multiple chronic conditions and the fact many remain undiagnosed due to lack of awareness and insufficient health-care access. At the same time, infectious and parasitic diseases still pose substantial challenges to the public health system in India, resulting in a double burden of disease and an important share of the global burden of disease (Ministry of Health and Family Welfare 2015) [4].

The city of Kanpur in the north Indian state of (U.P.). It is famous for its leather industry. It is 16 ranks in pollution index (90.59) by city mid-year in India. Kanpur produces high garbage it affects the ground water and human health can cause the communicable and non-communicable diseases in the community.

Materials and Methods

A community-based survey was carried out among people residing near garbage houses of district Kanpur to assess communicable and non-communicable diseases and their nutritional status. The study was conducted during period of 2020 to 2021 with the sample size of 100 respondents, 50 communicable and 50 non-communicable diseases. The data concerning communicable and non-communicable diseases and dietary intake of the respondents were collected using communicable and non-communicable diseases and 24-hour recall method were obtained from the respondents by

'questionnaire-cum interview' and purposive random sampling method. The nutrient intake was compared with the suggested intake was compared with recommended dietary allowances (RDA) of ICMR (2020).

Data was analyzed statistically frequency, standard deviations, correlation coefficient, Z test, mean and percentage. The level of significance was taken at $P < 0.05$ for the study.

Results and Discussion

The present study "Study on prevalence of communicable

and non- communicable disease among residing people near garbage houses in Kanpur city". The purpose of the study was to assess lifestyle, hygienic condition, garbage index, communicable and non- communicable disease among people residing near garbage houses. The sample size of the study was 100. The instrument used for the study is self-structured interview cum questionnaire method. Structured was prepared to determine awareness of communicable and non- communicable disease regarding nutritional and health status.

Table 1: Distribution of respondents according to communicable and non -communicable disease

S. No.		Communicable Disease		Non-communicable Disease	
1.	Knowledge about disease	50	50.0	35	35.0
2.	Know about causes	31	31.0	16	16.0
3.	Effect of disease on health	16	16.0	15	15.0
4.	Know symptoms of disease	30	30.0	28	28.0

Table 1 reveals that distribution of respondents according to communicable and non-communicable disease, maximum 50.0 per cent of respondents were knowledge about communicable disease and 35.0 per cent of respondents know about non- communicable disease. 31.0 per cent of respondents know about causes of communicable disease and 16.0 per cent of respondents know about causes of non-communicable disease. 30.0 per cent of respondents know the symptoms of the communicable disease and 28.0 per cent of respondents know the symptoms of non-communicable disease whereas 16.0 per cent of respondents know the effect on health of communicable disease and 15.0 per cent of respondents know the effect on health of non- communicable disease in the study area. Because lack of disease knowledge and awareness of disease became by garbage index.

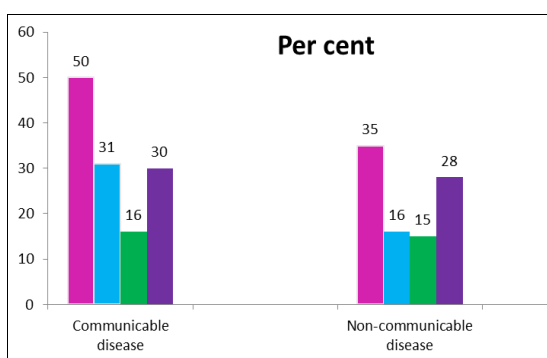


Fig 1: Distribution of respondents according to knowledge of communicable and non -communicable disease

Table 2: Distribution of respondents according to suffering from any communicable diseases

1.	Communicable diseases	Frequency	Per cent
a.	Infected	23	23.0
b.	Uninfected	27	27.0

Table 2 shows that distribution of respondents according to suffer from any communicable disease, maximum 27.0 per cent of respondents were not suffering from any communicable diseases minimum 23.0 per cent of respondents were suffering from communicable diseases

(fever, cold and cough, malaria) in the study area. Because not attention on hygiene and sanitation.

Table 3: Distribution of respondents according to suffer from any non- communicable diseases

2.	Non- communicable diseases	Frequency	Per cent
a.	Infected	17	17.0
b.	Uninfected	33	33.0

Table 3 indicates that distribution of respondents according to suffer from any non- communicable diseases, maximum 33.0 per cent of respondents were not suffering from non-communicable disease, minimum 17.0 per cent of respondents were suffering from non- communicable diseases (hypertension, heart disease, diabetes, gastric problem) in the study area. Because not maintain your lifestyle, taking addiction, dietary pattern, balance diet, and nutritional deficiency etc.

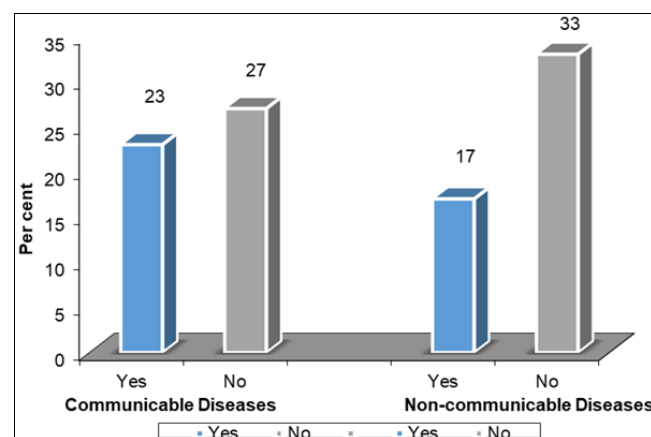


Fig 2: Distribution of respondents according to suffer from any communicable diseases and Non communicable diseases

Table 4: Distribution of the respondents according to suffer from both communicable and non- communicable diseases

3.	Both communicable and non-communicable diseases	Frequency	Per cent
a.	Communicable diseases	13	13.0
b.	Non- communicable diseases	11	11.0

Table 4 indicates that distribution of the respondents according to suffer from both communicable and non-communicable diseases, 13 per cent of respondents suffered from both communicable and non-communicable diseases in 27 percent communicable diseases and 11 per cent of respondents suffered from both communicable and non-communicable diseases in 17 per cent non-communicable diseases.

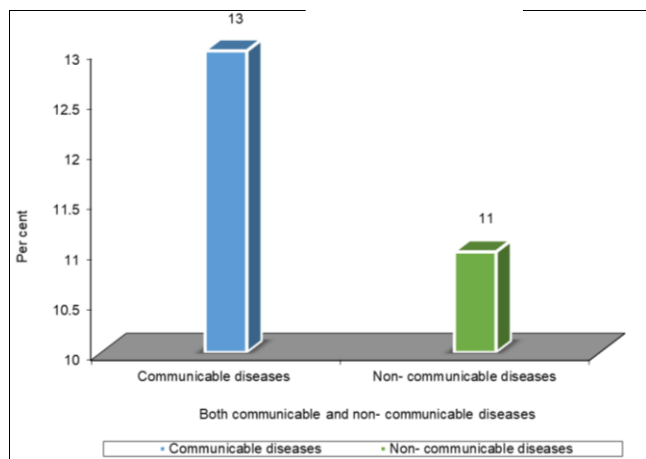


Fig 3: Distribution of the respondents according to suffer from both communicable and non-communicable diseases

Table 5: Distribution of respondents according to get health check up

4.	Get health check up	Frequency	Per cent
a.	Once in 3 months	3	3.0
b.	Once in 6 months	6	6.0
c.	Once in 1 years	12	12.0
d.	When needed	74	74.0
e.	Never	5	5.0

Table 5 depicts that distribution of respondents according to get health check up, maximum 74.0 per cent of respondents were getting health check-up when needed followed by 12.0 per cent of respondents once in 1 year, 6.0 per cent of respondents once in 6 months and 5.0 per cent never, minimum 3.0 per cent of respondents once in 3 months in the study area. Because of money problem, lack of education and awareness.

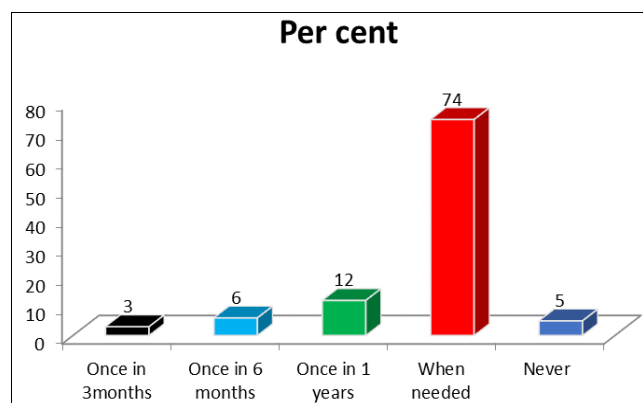


Fig 4: Distribution of respondents according to get health check up

24 Hour Recall Method

Table 6: Distribution of respondents according to energy requirement

Gender	Energy (Kcal/ day)			Deficit/ Increase	Z test	Significant level
	Mean	S.D.	RDA			
Male	1818.2	98.2	2710	-32.9	15.878*	<0.05
Female	1395.0	167.8	2130	-34.5		
Total	1564.3	253.0				

Table 6 reveals that nutrients intake according to “Indian council of medical research 2020 recommended dietary allowance (RDA)” table in male respondents average energy intake 1818.2 kcal which found to be deficient from RDA 32.9 per cent whereas in female respondents average energy intake 1395.0 kcal also shows deficient 34.5 per cent a significant difference of mean between male and female respondents in energy intake observed statistically significant at 5 per cent probability level. Because lack knowledge balance diet and nutritional knowledge. It is associated with body weight loss, along with changes in body composition, as well as reduced basal metabolic rate and physical activity.

Table 7: Distribution of respondents according to protein requirement

Gender	Protein (g/day)			Deficit/ Increase	Z test	Significant level
	Mean	S.D.	RDA			
Male	22.2	3.2	42.9	-48.2	3.286*	<0.05
Female	19.7	4.4	36.3	-45.7		
Total	20.7	4.1				

Table 7 depicts that distribution of respondents according to protein requirement, male respondents average protein intake 22.2 gm which found to be deficient from RDA 48.2 per cent whereas in female respondents average protein intake 19.7 gm also shows deficient 45.7 per cent a significant difference of mean between male and female respondents in protein intake observed statistically significant at 5 per cent probability level. Because they were not used according to daily requirements such as pulses, meat, fish, egg, milk and milk etc products in diet.

Table 8: Distribution of respondents according to fat requirement

Gender	Fat (g/ day)			Deficit/Increase	Z test	Significant level
	Mean	S.D.	RDA			
Male	13.5	2.2	30	-55.0	1.175	>0.05
Female	13.0	1.9	25	-48.0		
Total	13.2	2.0	-	-		

Table 8 reveals that distribution of respondents according to fat requirement, male respondents average fat intake 13.5gm which found to be deficient from RDA 55.0 per cent whereas in female respondents average fat intake 13.0 gm also shows deficient 48.0 per cent a significant difference of mean between male and female respondents in fat intake observed statistically non-significant at less than 5 per cent probability level. Because of lack of nutrients knowledge they were not used nuts, oils etc in their diet.

Table 9: Distribution of respondents according to calcium requirement

Gender	Ca (g/ day)			Deficit/Increase	Z test	Significant level
	Mean	S.D.	RDA			
Male	392.4	73.7	800	-50.9	1.761	>0.05
Female	417.5	63.6	800	-47.8		
Total	407.4	68.6				

Table 9 indicates that distribution of respondents according to calcium requirements, female respondents average calcium intake 417.4 gm which found to be deficient from RDA 47.8 per cent whereas in male respondents average calcium intake 392.4 gm also shows deficient 50.9 per cent a non-significant difference of mean between female and male respondents in calcium intake observed statistically non-significant at less than 5 per cent probability level. Because not proper used of milk and milk products and beans etc. in their diet.

Table 10: Distribution of respondents according to iron requirement

Gender	Fe (mg/ day)			Deficit/Increase	Z test	Significant level
	Mean	S.D.	RDA			
Male	5.7	1.3	11	-48.2	3.108*	<0.05
Female	6.5	1.2	15	-56.7		
Total	6.2	1.3				

Table 10 shows that distribution of respondents according to iron requirement, female respondents average iron intake 6.5 mg which found to be deficient from RDA 56.7 per cent whereas in male respondents average iron intake 5.7 mg also shows deficient 48.2 per cent a significant difference of mean between female and male respondents in iron intake observed statistically significant at 5 per cent probability level. Because of lack of nutritional knowledge and not proper used of dark green leafy vegetables, dry fruits, beans, peas, meat etc. in their diet.

Table 11: Distribution of respondents according to magnesium requirement

Gender	Mg (mg/day)			Deficit/Increase	Z test	Significant level
	Mean	S.D.	RDA			
Male	213.3	42.8	320	-33.3	4.910*	<0.05
Female	172.0	38.7	270	-36.3		
Total	188.5	45.0				

Table 11 shows that distribution of respondents according to magnesium requirement, male respondents average magnesium intake 213.3 mg which found to be deficient from RDA 33.3 per cent whereas in female respondents average magnesium intake 172.3 mg also shows deficient 36.3 per cent a significant difference of mean between male and female respondents in magnesium intake observed statistically significant at 5 per cent probability level. Because of the lack used of seeds, banana, chocolate nuts, wheat, dry beans in their diet.

Table 12: Distribution of respondents according to zinc requirement

Gender	Zn (mg/ day)			Deficit/Increase	Z test	Significant level
	Mean	S.D.	RDA			
Male	6.0	1.2	14	-57.1	0.816	>0.05
Female	5.8	1.2	11	-47.3		
Total	5.9	1.2				

Table 12 reveals that distribution of respondents according to zinc requirement, male respondents average zinc intake 6.0 mg which found to be deficient from RDA 57.1 per cent whereas in female respondents average zinc intake 5.8mg also shows deficient 47.3 per cent a non-significant difference of mean between male and female respondents in zinc intake observed statistically non-significant at less than 5 per cent probability level. Because of the lack of dairy products, eggs, meats, cereals etc in their diet.

Table 13: Distribution of respondents according to vitamin 'A' requirement

Gender	Vitamin A (µg/ day)			Deficit/Increase	Z test	Significant level
	Mean	S.D.	RDA			
Male	286.7	28.2	460	-37.7	10.301*	<0.05
Female	215.1	41.3	390	-44.8		
Total	243.8	50.7				

Table 13 perusal that distribution of respondents according to vitamin 'A' requirement, male respondents average vitamin 'A' intake 286.7 microgram which found to be deficient from RDA 37.7 per cent whereas in female respondents average vitamin 'A' intake 215.1 microgram also shows deficient 44.8 per cent a significant difference of mean between male and female respondents in vitamin 'A' intake observed statistically significant at less than 5 per cent probability level. Because of lack of nutritional knowledge and improper used of carrot, dark green leafy vegetable, egg, milk and milk products in their diet.

Table 14: Distribution of respondents according to thiamine requirement

Gender	Vitamin 'B1' (mg/day)			Deficit/Increase	Z test	Significant level
	Mean	S.D.	RDA			
Male	0.98	0.11	1.5	-34.7	13.170*	<0.05
Female	0.57	0.20	1.4	-59.3		
Total	0.73	0.26				

Table 14 reveals that distribution of respondents according to thiamine requirement, male respondents average vitamin 'B1' intake 0.98 mg which found to be deficient from RDA 34.7 per cent whereas in female respondents average vitamin 'B1' intake 0.57 mg also shows deficient 59.0 per cent a significant difference of mean between male and female respondents in vitamin 'B1' intake observed statistically significant at less than 5 per cent probability level. Because lack of peas, bananas, orange, bread, and liver in their diet.

Table 15: Distribution of respondents according to riboflavin requirement

Gender	Vitamin 'B2' (mg/day)			Deficit/ Increase	Z test	Significant level
	Mean	S.D.	RDA			
Male	0.95	0.15	2.1	-54.8	8.327*	<0.05
Female	0.59	0.28	2.0	-70.5		
Total	0.74	0.29				

Table 15 shows that distribution of respondents according to

Table 16: Distribution of respondents according to niacin requirement

Gender	Vitamin 'B3' (mg/day)			Deficit/ Increase	Z test	Significant level
	Mean	S.D.	RDA			
Male	6.4	1.0	15	-57.3	5.176*	<0.05
Female	5.3	1.1	12	-55.8		
Total	5.8	1.2				

Table 16 indicates that distribution of respondents according to niacin requirement, male respondents average vitamin 'B3' intake 6.4 mg which found to be deficient from recommended dietary allowance 57.3 per cent whereas in female respondents average vitamin 'B3' intake 5.3 mg also shows deficient 55.8 per cent a significant difference of mean between male and female respondents in vitamin 'B3' intake observed statistically significant at less than 5 per cent probability level.

Table 17: Distribution of respondents according to vitamin 'C' requirement

Gender	Vitamin 'C' (mg/day)			Deficit/ Increase	Z test	Significant level
	Mean	S.D.	RDA			
Male	27.4	6.7	65	-57.8	3.109*	<0.05
Female	23.7	4.2	55	-56.9		
Total	25.2	5.6				

Table 17 depicts that distribution of respondents according to vitamin 'C' requirement, male respondents average vitamin 'C' intake 27.4 mg which found to be deficient from RDA 57.8 per cent whereas in female respondents average vitamin 'C' intake 23.7 mg also shows deficient 56.9 per cent a significant difference of mean between male and female respondents in vitamin 'C' intake observed statistically significant at less than 5 per cent probability level. Because improper use of anole, citrus fruits, orange, strawberries, broccoli in their diet.

Table 18: Correlation coefficient between nutrients intake of the respondents and their age group and monthly income

S. No.	Nutrients intake	Correlation coefficient	
		Age group	Monthly Income
1.	Energy (Kcal/day)	-0.1160	0.1201
2.	Protein (g/day)	-0.1884	0.1387
3.	Fat (g/day)	-0.0915	0.1382
4.	Ca (g/day)	-0.0891	0.1357
5.	Fe (mg/day)	0.1697	0.2098
6.	Mg (mg/day)	-0.0713	0.1981
7.	Zn (mg/day)	0.1721	-0.1241
8.	Vitamin 'A' (µg/day)	-0.0826	0.1412
9.	Thiamine (mg/day)	-0.1729	0.0435
10.	Riboflavin (mg/day)	-0.1593	0.1609
11.	Niacin (mg/day)	0.1256	0.1089
12.	Vitamin 'C' (mg/day)	-0.1394	0.2053

riboflavin requirement, male respondents average vitamin 'B2' intake 0.95 mg which found to be deficient from RDA 54.8 per cent whereas in female respondents average vitamin 'B2' intake 0.59 mg also shows deficient 70.5 per cent a significant difference of mean between male and female respondents in vitamin 'B2' intake observed statistically significant at less than 5 per cent probability level. Because of the lack used of milk, egg, meat, beans, dairy products in their diet.

Table 18 the data show in table correlation coefficient between nutrients intake and independent variable energy, protein, fat, magnesium, vitamin 'A', vitamin 'B1', vitamin 'B2' and vitamin 'C' negatively correlated with age of the respondents at 5.0 per cent level hence according to age of the respondents such nutrients intake decreases statistically whereas iron, zinc, niacin was found to positive correlated with age group of the respondents. Monthly income positively correlated with energy, protein, fat at 5.0 per cent and level and vitamin 'C' significantly correlated with income of the respondents.

Table 19: Correlation coefficient between nutrients intake of respondents and their communicable and non-communicable diseases

S. No.	Nutrients intake	Correlation Coefficient	
		Communicable disease	Non communicable disease
1.	Energy (Kcal/day)	0.1642	0.1834
2.	Protein (g/day)	0.4423*	0.6582*
3.	Fat (g/day)	0.2504*	0.4343*
4.	Ca (mg/day)	-0.1731	0.2205*
5.	Fe (mg/day)	-0.1352	0.3543*
6.	Mg (mg/day)	0.1052	0.3713*
7.	Zn (mg/day)	-0.3657	-0.3115
8.	Vitamin 'A' (µg/day)	0.4436*	0.3518*
9.	Vitamin 'B1' (mg/day)	-0.1034	-0.1981
10.	Vitamin 'B2' (mg/day)	-0.1925	-0.1926
11.	Vitamin 'B3' (mg/day)	0.3589*	0.2731*
12.	Vitamin 'C' (mg/day)	0.3420*	0.3958*

(* Significant at 5.0% level of significance)

Table 19 indicates that correlation coefficient between nutrients intake of residing people near garbage houses and their communicable and non-communicable diseases, protein, fat, vitamin 'A', vitamin 'B3', and vitamin 'C' showed positive significant effect with communicable diseases of the respondents residing near garbage houses at 5 per cent level whereas calcium, iron, zinc, thymine, riboflavin showed negative effect of correlation coefficient in the study area. protein, fat, calcium, iron, magnesium, vitamin 'A' vitamin 'B3' and vitamin 'C' positive significant correlated with non-communicable diseases of the respondents at 5 per cent significant level. Nutrients intake zinc, thymine, riboflavin negative correlated with

non- communicable diseases of the respondents at 5 per cent. Energy intake by respondents showed positive effect.

Conclusion

It may be concluded that the nutritional status of the people in the study area was poor due to the low intake of nutrient-rich foods in their daily diet. Poverty, lack of awareness, and insufficient knowledge about nutrition were the major causes of poor nutritional status and related diseases. The study found that most people were undernourished. Low nutritional intake and environmental pollution caused by garbage also negatively affect human health. Communicable diseases were found to be more common than non-communicable diseases. In some cases, people suffered from both communicable and non-communicable diseases. Overall, the health status of the people in the study area was adversely affected by poor waste management, low nutritional status, and lack of nutritional knowledge and awareness.

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