Over population and Associated Risks: An Epidemiological Survey

Neeraj Kumar Bansal[1], Reeja Raju[2], Supriya Chaturvedi[3]

[1]Professor, [2]Associate Professor, [3]Assistant Professor, Jai Institute of Nursing and Research, Gwalior, Madhya Pradesh 475001, India.

Abstract

Overpopulation is a global problem which affects almost everyone in the globe by reducing the available natural resources in the existence. An epidemiological survey was conducted with the aim to assess the people's response towards overpopulation and its harms to them. The study was conducted based upon descriptive survey design using interview method. The study comprises 80 people residing in selected rural area. The data was collected based on purposive sampling using checklist. The study reveals that most of the people are residing by doing unskilled work due to unemployment with poor living standard.

Keywords: Overpopulation; Epidemiology; Descriptive survey; Purposive sampling; Living standard.

Introduction

India is the second most populated country in the world with nearly a fifth of the world's population. According to the 2017 revision of the World Population Prospects, population stood at 1,324,171,354.

During 1975–2010, the population doubled to 1.2 billion. The Indian population reached the billion mark in 1998. India is projected to be the world's most populous country by 2024, surpassing the population of China. It is expected to become the first political entity in history to be home to more than 1.5 billion people by 2030, and its population is set to reach 1.7 billion by 2050. Its population growth rate is 1.13%, ranking 112th in the world in 2017.[1]

India has more than 50% of its population below the age of 25 and more than 65% below the age of 35. It is expected that, in 2020, the average age of an Indian will be 29 years, compared to 37 for China and 48 for Japan; and, by 2030, India's dependency ratio should be just over 0.4.[1]

Human overpopulation is among the most pressing environmental issues, silently aggravating the forces behind global warming, environmental pollution, habitat loss, the sixth mass extinction, intensive farming practices and the consumption of finite natural resources, such as fresh water, arable land and fossil fuels.[2]

Need of the study

Loss of Fresh Water: Most of the freshwater resources are either unreachable or too polluted, leaving less than 1% of the world freshwater, or about 0.003% of all water on Earth, readily accessible for direct human use. According to the Global Outlook for Water Resources to the Year 2025, it is estimated that by 2025, more than half of the world population will be facing water-based vulnerability and human demand for water will account for 70% of all available freshwater.[2,3]

Corresponding Author: Neeraj Kumar Bansal, Professor, Jai Institute of Nursing and Research, Gwalior, Madhya Pradesh 475001, India.

E-mail: drneerajkumarbansal@gmail.com

Depletion of Natural Resources: As the human population continues to explode, finite natural resources, such as fossil fuels, fresh water, arable land, coral reefs and frontier forests, continue to plummet, which is placing competitive stress on the basic life sustaining resources and leading to a diminished quality of life.[2,3]

Increased Emergence of New Epidemics and Pandemics: A WHO report shows that environmental degradation, combined with the growth in world population, is a major cause of the rapid increase in human diseases, which contributes to the malnutrition of 3.7 billion people worldwide, making them more susceptible to disease.[2,3]

Less Freedom, More Restrictions: As population densities increase, laws, which serve as a primary social mediator of relations between people, will more frequently regulate interactions between humans and develop a need for more rules and restrictions to regulate these interactions.[2,3]

Increased Habitat Loss: Human overpopulation is a major driving force behind the loss of ecosystems, such as rainforests, coral reefs, wetlands and Arctic ice. Rainforests once covered 14% of the Earth's land surface, now they cover a bare 6% and experts estimate that the last remaining rainforests could be consumed in less than 40 years and certainly by the end of the century at the current rate of deforestation.[2,3]

Elevated Crime Rate: As human overpopulation drives resources and basic necessities, such as food and water, to become scarcer, there will be increased competitiveness for these resources which leads to elevated crime rates due to drug cartels and theft by people in order to survive.[2,3]

Objectives

To check the attitude of the people towards overpopulation.

To findout the association between the attitude level and selected demographic variables of the people under study.

Materials and Methods

Descriptive survey design was used to collect the data from the samples.[4] The researcher used the interview method for data collection. The study was conducted in selected rural area of Gwalior district. Selection of setting was done on the basis of availability of samples and feasibility of the study.

The population for the present study comprises rural population residing in the selected rural area of Gwalior district, M.P. Purposive sampling was felt to be suitable for appropriateness of sampling. A total of 80 samples were interviewed to collect the data using the structured questionnaire.

The investigator collected data from health providers using Checklist consisting 24 items for identifying their attitude towards overpopulation. A score of one (1) was assigned to every correct response while zero (0) was assigned to every wrong answer. The scores were measured on a 3 point scale named as negative (0–12), neutral (13–18), and positive (19–24) attitude.

Collected data were coded, grouped and analyzed by using descriptive statistics i.e. percentage, mean, standard deviation and inferential statistics i.e. chi-square was used to compare the relationship between demographic variables and interview scores of study population.

Results

Table 1: Demographic data analysis

Demographic Variable	Frequency	Percentage	Mean knowledge	SD
1. Age				
a. Below 30 years	34	42.5%	12.58	2.29
b. 30–50 years	37	46.25%	11.02	2.4
c. More than 50 years	9	11.25%	11.88	2.48
2. Gender				
a. Male	37	46.25%	11.89	2.4
b. Female	43	53.75%	11.69	2.31
3. Qualification				
a. Illiterate	32	40%	11.25	2.4
b. Higher secondary	31	38.75%	11.22	2.26
c. Matric	10	12.5%	14.5	2.4
d. Graduation	6	7.5%	12.66	2.3
e. Post-graduation	1	1.25%	14	0
4. Occupation				
a. Private job	26	32.5%	11.42	2.41
b. Government job	2	2.5%	14.5	2.19
c. Unemployed	41	51.25%	11.97	2.3
d. Business	11	13.75%	11.45	2.46
5. Monthly income				
a. Less than 10000	57	71.25%	11.94	2.4
b. 10000–30000	19	23.75%	11.36	2.29
c. More than 30000	4	5%	11.45	2.33
6. Type of family				
a. Nuclear	14	17.5%	11.21	2.26
b. Joint	66	82.5%	11.9	2.4
7. Any illness				
a. Yes	19	23.75%	12.47	2.49
b. No	61	76.25%	11.57	2.4

The frequency and percentage distribution of demographic variable showed that:

Age: Among 80 respondents, 34 were under the age group of less than 30 years of age, 37 were grouped in 31–50 years of age and 9 belongs to more than 50 years of age. *Gender:* out of 80 respondents; 37 were male respondents and 43 were females. *Qualification:* 31 candidates studied upto higher secondary, 10 respondents were matric qualified, 6 were graduates, 1 was post-graduate and 32 were illiterates. *Occupation:* the occupational status of the respondents shows that 26 were private employees, 2 were in government job, 41 were unemployed and 11 were businessman. *Income:* frequency distribution of respondents based on monthly income showed that 57 respondents had monthly income of lesser than 10000, 19 respondents had income of 10000–30000, and only 4 had income of more than 30000. *Type of family:* the outcome showed that 66 respondents belong to joint family while 14 belong to nuclear families. *Any illness:* the outcome showed that 19 were suffering from some illness and 61 didn't have any illness (Table 1).

Table 2: Distribution of samples based on their attitude scores

Sn.	Score Category	Frequency	Percentage	Mean knowledge	SD
1	Negative (0–12)	52	65%	10.34	2.4
2	Neutral (13–18)	27	33.75%	14.29	2.32
3	Positive (19–24)	1	1.25%	19	0
4	Total	80	100%	11.78	2.4

The analyzed data showed that negative scoring category frequency was 52 while neutral category frequency was 27 and one scored under the positive category. The mean knowledge score of the negative attitude scoring respondents was 10.34 with SD of 2.4 while neutral attitude scoring level was 14.29 with SD of 2.32 and 19 for the positive attitude scoring respondents respectively. The SD for this category was not calculated as there was only one sample under this. The overall scores of the respondents' shows a score comes under negative attitude category (Table 2).

Table 3: Association of attitude scores with selected demographic variables

Sn.	Demographic Variable	Chi-Square Value	Df	Table Value	Level of Significance
1	Age	4.13	2	5.99	NS
2	Gender	1.18	1	3.84	NS
3	Qualification	1.91	4	9.49	NS
4	Occupation	9.53	3	7.82	Significant
5	Monthly income	4.35	2	5.99	NS
6	Type of family	0	1	3.84	NS
7	Any illness	1.3	1	3.84	NS

Table - Statistical inference based on Chi-Square test between interview score of subjects and demographic variables. (Table value > calculated value = Not significant).

To assess the knowledge of samples regarding overpopulation; the following frequency and percentage distribution of samples' knowledge on the basis of scores.

Chi-square was calculated to findout association of the knowledge score with their demographic variables regarding selected people shows that there is no significant association between knowledge scores when compared to age, gender, qualification and monthly income and in significance with occupation (Table 3).

Discussion

The study reveals that most of the respondents of rural population were unemployed and a large number of people were deployed in unskilled work which is the leading cause of the less income of the rural population which leads to poor living standard causing various nutrition diseases like kwashiorkor, marasmus and even TB etc. Study also reveals that the people residing in the rural areas had lesser knowledge about diseases and their symptoms, and usually depends on the local treatment options.

Study concluded that overpopulation leads to most of the environmental issues such as global warming, environmental pollution, habitat loss, intensive farming practices and consumption of finite natural resources like fresh water, land and fossil fuels.

The study recommended that there is a strong need for rural population to know regarding population growth, its effect on their own and environment, control strategies which should be adopted to limit the population growth.

Limitations: This study was confined to:

- 80 respondents from selected regional settings of Gwalior (M.P.).
- Limited time was available for data collection.
- Random sampling could not be applied due to limited period of study.
- Standardized tool could not be located by the investigator, so developed the tool for the study.
- Non probability sampling limits the generalization of findings.

References

1. https://en.wikipedia.org/wiki/Demographics_of_India.

2. https://www.everythingconnects.org/overpopulation-effects.html.

3. https://www.activesustainability.com/sustainable-development/causes-consequences-overpopulation/.

4. Sharma SK. Nursing Research and Statistics, Research approach and designs, Elsevier Publication, pp.93–122.