

## Original Research Article

# Socio-economic coordinates and morbidity profile of the inhabitants of a peri-urban area of Srinagar district of Jammu and Kashmir India: a cross sectional study

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### ABSTRACT

**Background:** The present study was planned to find out socio-economic coordinates and morbidity profile of the inhabitants of a peri-urban area of Srinagar district- urban field practice area of Sher-i-Kashmir Institute of Medical Sciences (SKIMS).

**Methods:** A cross-sectional community-based house to house study of Anchar area (peri-urban) was conducted for a period of six months. Out of six localities/mohallas of anchar, three localities/mohallas representing the core area and comprising the major chunk of population were purposively selected for the study. All the households of the selected localities were included in the study.

**Results:** The inhabitants of area are moderately positioned on socio-economic scale. The area lacks an adequate liquid waste disposal system. The prevalence of tobacco use was found to be 30.61%. 10.94% of the total population was found to be morbid. Most common morbidities found were hypertension (5.15%) followed by diabetes (1.41%), hypothyroidism (1.23%) and cardiovascular disease (0.82%).

**Conclusions:** Life style diseases are preponderate among the study population. Sustained and regular health check-ups ought to be carried out with a special focus on awareness and education.

**Keywords:** Morbidity, Population, Socioeconomic status, Peri-urban

### INTRODUCTION

The 21<sup>st</sup> century has witnessed a paradigm shift in every sphere of human life. Its impact is clearly discernible in the health sector as well, which is reflected through the decreased infant mortality rates, improved child survival rates and hence, increased average life expectancy. While the longevity can be seen as an outcome of collective socio-economic development and is a triumph for health sector especially the public health, however, the vulnerability of the people to various ailments have also increased manifold. As per the global estimates of World Health Organization (WHO), 41 million people die each year because of the non-communicable diseases (NCDs)

thereby, accounting for 71% of the total deaths with cardiovascular diseases (CVDs) claiming 17.9 million people annually followed by cancer (9.0 million), chronic respiratory diseases (3.9 million), diabetes (1.6 million) and others (7.7 million) respectively.<sup>1</sup> India, which holds the second highest population in the world is no exception to it and like many developing countries, it has also the high levels of morbidity.<sup>2</sup> The morbidity profile of the population suggests that comparatively, there is high prevalence of infectious diseases among all the sections of the society while the proportion of NCDs is on rise. As per the estimates put forth by WHO, the major contributors of communicable diseases in case of India are Infections and parasitic diseases, respiratory infections, diarrheal diseases and childhood diseases while among the NCDs,

cardiovascular diseases and neuropsychiatric disorders account for the large disease burden and falls and road traffic accidents contribute to the largest disability burden among injuries.<sup>3</sup> It is an established fact that mortality and morbidity rates are the fundamental indicators of health status of the population and have direct bearing upon the life expectancy. While, ample data is available on the mortality rates and life expectancy, however, comparatively, there is a paucity of data regarding the morbidity patterns of various segments of population in India. Therefore, the present study was undertaken to study socio-economic status and the health profile of inhabitants of peri-urban area of Anchar falling within immediate vicinity of Sher-i-Kashmir Institute of Medical Sciences (SKIMS) with an intention to carry out specific health-based interventions as per the genuine health needs of the population.

## METHODS

A community based cross-sectional household study was conducted among the inhabitants of peri-urban area of Anchar in the immediate vicinity of SKIMS. The study was conducted for a period of six months from October 2021 to March 2022. Out of 6 localities/mohallas of anchar, 50% localities comprising the major chunk of the population were randomly selected for the study. All the members of the households visited were included in the study. A total of 5382 people from 875 households participated in the study. After obtaining consent, information was sought from the responsible member present in the household only after explaining the purpose of the study and obtaining the consent. A semi-structured pre-tested questionnaire comprising of questions related to socio-demographic information and history of any morbidity of the participants was used. Locked houses were revisited once or twice, and if found locked, were excluded from the study. Those who did not provide consent were also excluded from the study.

### Statistical analysis

The collected data was analyzed using statistical package for the social sciences (SPSS) version 20. The data was presented in both proportions and percentages. To find any association between relevant variables, Chi-square test was applied. The associations with p value of <0.05 were considered statistically significant. The socio-economic classification of households was done using modified Kuppuswamy's socio-economic status (2021) scale.<sup>2</sup>

## RESULTS

The present study included a total of 5382 respondents spanning 875 households. 50.70% (2728) of the study respondents were males and 49.31% (2654) were females. So far as the age distribution of study respondents is concerned, 68.52% (3688) of the respondents belonged to the productive age group of 15-59 followed by 14.86% (800) in 6-14 age group. 8.29% (446) respondents belonged to the elderly age group of 60 years and above while as a least of 8.32% (448) respondents belonged to under-5 age group. A literacy rate of 56.58% was found with males having comparatively higher literacy rate than females. So far as, the occupational status of people is concerned, labour class constituted the major chunk of the working-age population.

Collectively, the occupational diversity of the area comprises of skilled workers (15.27%), unskilled workers (9.57%), clerical class (2.93%), business class (2.10%), shop keepers (1.26%), farmers (1.21%), semi-skilled workers (0.98%), professional class (0.22%) and semi-professional class (0.04%). With regard to availability of various household facilities, all the households were found equipped with drinking water facilities, hand washing facilities and latrine facilities. Though, whole area receives the treated water supply, however only 84.46% (739) households receive the regular water supply. Further, out of 875 households, majority i.e., 93.60% (819) of the households were found having the sanitary latrine as against 6.40% (56) households which had the insanitary latrine. The waste disposal system of the area presents a mixed picture if not a grim one. Though the majority 97.83% (856) of the households use municipal bins for the disposal of solid waste, however, only 32.22% (282) households dispose off their liquid waste into proper maintained municipal drains or into the septic tanks as against the 67.77% (593) who lacked any proper liquid waste disposal system, which is an emerging concern.

One of the major social problems confronting the people of the area is menace of substance abuse. Collectively, 30.61% of the study population aged 15 years and above were found indulging in tobacco use. Out of 3888 respondents aged 15 years and above, 26.76% (987) males were found making use of tobacco as against the 3.85% (142) females. Pertinently and as observed, the major form of form of tobacco use among male population was smoking, while as, it was snuffing among female population (Table 1).

**Table 1: Socio-demographic characteristics of the study population (n=5382).**

| Characteristics   | Total, n=5382 | Percent (%) |
|-------------------|---------------|-------------|
| <b>Age (year)</b> |               |             |
| ≤5                | 448           | 8.32        |
| 6-14              | 800           | 14.86       |
| 15-59             | 3688          | 68.52       |
| 60 and above      | 446           | 8.29        |

Continued.

| Characteristics                                  | Total, n=5382                                 | Percent (%) |
|--------------------------------------------------|-----------------------------------------------|-------------|
| <b>Sex</b>                                       |                                               |             |
| Male                                             | 2728                                          | 50.69       |
| Female                                           | 2654                                          | 49.31       |
| <b>Education</b>                                 |                                               |             |
| Not applicable (<5)                              | 300                                           | 5.57        |
| Illiterate                                       | 2141                                          | 39.78       |
| Primary school                                   | 766                                           | 8.90        |
| Middle school                                    | 691                                           | 14.23       |
| High school                                      | 306                                           | 5.68        |
| Higher secondary school/diploma                  | 562                                           | 10.44       |
| Graduate                                         | 176                                           | 3.27        |
| Professional                                     | 440                                           | 8.17        |
| <b>Occupational status</b>                       |                                               |             |
| Student                                          | 1588                                          | 29.50       |
| Shop owner                                       | 68                                            | 1.26        |
| Business                                         | 113                                           | 2.10        |
| Farmer                                           | 65                                            | 1.21        |
| Clerical                                         | 158                                           | 2.93        |
| Professional                                     | 12                                            | 0.22        |
| Semi-professional                                | 2                                             | 0.04        |
| Skilled worker                                   | 822                                           | 15.27       |
| Semi-skilled worker                              | 53                                            | 0.98        |
| Un-skilled worker                                | 515                                           | 9.57        |
| Others (unemployed and idle)                     | 1986                                          | 36.90       |
| <b>Socio-economic class</b>                      |                                               |             |
| Upper class                                      | 143 (24 households)                           | 2.66        |
| Middle class                                     | 3296 (525 households)                         | 61.24       |
| Lower class                                      | 1943 (326 households)                         | 36.10       |
| <b>Availability of household characteristics</b> |                                               |             |
| Hand washing facility                            | 875 households                                | 100.00      |
| Drinking water source                            | 875 households                                | 100.00      |
| Treated water supply                             | 875 households                                | 100.00      |
| Regular water supply                             | 739 households                                | 84.46       |
| Liquid waste disposal system                     | 282 households                                | 32.22       |
| Solid waste disposal system                      | 856 households                                | 97.83       |
| Latrine facility                                 | 875 households                                | 100.00      |
| Sanitary latrine                                 | 819 households                                | 93.60       |
| Insanitary latrine                               | 56 households                                 | 6.40        |
| <b>Social problems</b>                           |                                               |             |
| Smoking (n=3688)                                 | 1129 (out of 3688 i.e., those aged ≥15 years) | 30.61       |
| Men                                              | 987                                           | 26.76       |
| Women                                            | 142                                           | 3.85        |

Literacy rate was calculated for the population aged 7 years and above only as per the standard

With regard to the morbidity status, about 10.94% of the study population reported to have at least one morbidity. The comparative analysis of the morbidity pattern of the study population revealed that the most common morbidity was hypertension (5.15%) followed by diabetes (1.41%), hypothyroidism (1.23%), Cardio vascular disease (0.82%), neurological problems (0.57%), orthopedic problems (0.52%), respiratory problems (0.44%), disability (0.26%), gastric problems (0.18%), mental health problems (0.18%), ophthalmic problems (0.17%), cancer (0.07) and others (0.61%) (Table 2).

The data further revealed that majority of the respondents who reported to have any ailment were having single morbidity (92.52%) while as co-morbidity was reported to be present only among 7.47% respondents.

So far as the trend of co-morbidity is concerned, the most common co-morbidity found was hypertension with diabetes, followed by hypertension with cardio-vascular diseases, hypertension with hypothyroidism and diabetes with hypothyroidism (Table 3).

**Table 2: Morbidity profile of the study population (n=5382).**

| Morbidity                   | Frequency (N) | Percent (%) |
|-----------------------------|---------------|-------------|
| Hypertension                | 281           | 5.15        |
| Diabetes                    | 78            | 1.41        |
| Thyroid disorders           | 67            | 1.23        |
| Cardio vascular diseases    | 44            | 0.82        |
| Neurological problems       | 31            | 0.57        |
| Orthopedic problems         | 28            | 0.52        |
| Respiratory tract infection | 24            | 0.44        |
| Disability                  | 14            | 0.26        |
| Gastro intestinal infection | 10            | 0.18        |
| Mental health problems      | 10            | 0.18        |
| Ophthalmic problems         | 09            | 0.17        |
| Cancers                     | 04            | 0.07        |
| Others                      | 33            | 0.61        |
| No morbidity                | 4793          | 89.05       |

Table 4 shows the distribution of morbidity across socio-demographic characteristics. The tabulated data revealed that, comparatively morbidity was higher among females (11.60%) than males (10.30%). However, the difference was not statistically significant ( $P=0.125$ ). With regard to the family structure, it was observed that rate of morbidity was much higher among the respondents of joint families

(13.70%) than nuclear families (8.40%). The difference was statistically highly significant ( $P=0.000$ ). The higher morbidity among the joint families could be because of the fact that they include elderly members. So far as the distribution of morbidity across various age groups is concerned, the highest morbidity was found among the elderly group of 60 years and above (50.7%) seconded by 15-59-year age group (8.7%) and 0-5-year age group (3.6%) while the least morbidity was found among the age group of 6-14 years (3.2%). The difference in morbidity across various age groups was found to be statistically highly significant ( $p=0.000$ ). Further, class wise distribution of the morbidity suggested that, highest morbidity was found among middle socio-economic class (11.53%), followed by lower socio-economic class (10.03%) with the least among upper socio-economic class (9.80%). However, the difference was not statistically significant ( $p=0.223$ ).

**Table 3: Co-morbidity status of the study respondents (n=589).**

| Morbidities             | Frequency (N) | Percent (%) |
|-------------------------|---------------|-------------|
| One morbidity           | 545           | 92.52       |
| More than one morbidity | 44            | 7.47        |
| Total                   | 589           | 100.00      |

**Table 4: Morbidity pattern across various socio-demographic characteristics (n=5382).**

| Socio-demographic characteristics | Morbidity   |              | Total, N (%)  | Chi square ( $\chi^2$ ) | P value | Odds ratio |
|-----------------------------------|-------------|--------------|---------------|-------------------------|---------|------------|
|                                   | Yes, N (%)  | No, N (%)    |               |                         |         |            |
| Gender                            |             |              |               |                         |         |            |
| Male                              | 281 (10.30) | 2447 (89.70) | 2728 (100.00) | 2.349                   | 0.125   | 0.875      |
| Female                            | 308 (11.60) | 2346 (88.40) | 2654 (100.00) |                         |         |            |
| Family type                       |             |              |               |                         |         |            |
| Nuclear                           | 235 (8.40)  | 2558 (91.60) | 2563 (100.00) | 38.73                   | 0.0001  | 0.578      |
| Joint                             | 354 (13.70) | 2230 (86.30) | 2584 (100.00) |                         |         |            |
| Age group (years)                 |             |              |               |                         |         |            |
| 0 to 5                            | 16 (3.6)    | 433 (96.4)   | 449 (100.00)  | 814.669                 | 0.0001  | -          |
| 6-14                              | 26 (3.2)    | 774 (96.8)   | 800 (100.00)  |                         |         |            |
| 15-59                             | 321 (8.7)   | 3366 (91.3)  | 3687 (100.00) |                         |         |            |
| 60 and above                      | 226 (50.7)  | 220 (49.3)   | 446 (100.00)  |                         |         |            |
| Socio-economic class              |             |              |               |                         |         |            |
| Lower class                       | 195 (10.03) | 1748 (89.96) | 1943 (100.00) | 2.9967                  | 0.223   | -          |
| Middle class                      | 380 (11.53) | 2916 (88.47) | 3296 (100.00) |                         |         |            |
| Upper class                       | 14 (9.80)   | 129 (90.20)  | 143 (100.00)  |                         |         |            |

## DISCUSSION

The present study was conducted with an objective of finding the socio-economic status and health profile among the inhabitants of geographically defined peri-urban area of Kashmir valley. The empirical inputs divulge that people are moderately positioned on the socio-economic climber. The socio-economic classification of the people as worked out using the modified Kuppuswamy's socio-

economic status scale shows that the lower middle class constitute the major chunk of the population seconded by the lower class while as, the proportion of the upper-class people was found to be minimal. Further, the literacy rate was 56.58%. The occupational diversity of the area shows that non-agricultural labour class constitute the major chunk of the demographic dividend, while as the representation of the people in the public sector and trade and commerce is markedly less. With regard to certain

household characteristics such as hand washing facility, availability of drinking water, latrine facility and solid waste disposal system, the area fares well as almost all the households are well equipped with these basic facilities. However, the liquid waste disposal system of the area is a matter of immediate concern as majority of the households dispose off their liquid waste either into open or directly into to surrounding Anchar lake, which has resulted into its eutrophication. It is in place to mention here that till the recent past, majority of the inhabitants of the area relied on this lake for their sustenance as this lake has been a rich source of edible foods such as Fish, Lotus stems (locally known as Nadur in Kashmir) and Chest nuts. The resulting eutrophication of the lake as a consequence of sustained run-off's has not only deprived the inhabitants from their employment, but has also added to the morbidity of the people through bio-magnification. Substance abuse in the form of tobacco use was quite prevalent in the study population. In our study, it was observed that 30.61% of the study population aged 15 years and above were found indulging in tobacco use, out of which 26.76% were males and 3.85% were females. Pertinently, the major form of tobacco use among male population was smoking, while as, it was snuff among the female population. Our study results are more or less indicative of the results of the major studies conducted in the recent past by the global adult tobacco survey (GATS)- 2016/17<sup>4</sup> and National Health Family Survey (NHFS)-4 (2015/16).<sup>5</sup> The former study revealed that 35.2% of the men and 5.1% of the women smoke tobacco in Jammu and Kashmir while as, the latter study showed that the percentage of men and women who use any kind of tobacco in India is 44.5% and 6.8% respectively. Both of the above studies show that the prevalence of the tobacco use is more among men than women-the results which by and large confirm our stand. However, our study results synchronize more with the former study than the latter. It was observed that about 10.94% of the study population had an ailment of one or the other type at the time of the survey. Most common morbidity was hypertension followed by diabetes, hypothyroidism and cardio-vascular diseases. The results are in accordance with most of the studies in India, which show a higher prevalence of non-communicable diseases especially the hypertension and diabetes. A study conducted by Niranjana et al on Morbidity profile of a rural and an urban population of Bengaluru in South India, shows that major morbidities found among the study population were hypertension (8.5%), diabetes (8.1%), musculoskeletal problems (1.9%), heart problems (1.9%), and respiratory problems (0.9%).<sup>6</sup> Our study more or less also shows the same pattern with major morbidities being hypertension (5.15%), diabetes (1.41%), hypothyroid (1.23%), cardio-vascular diseases (0.82%) and respiratory problems (0.44%). The results of our study are also in accordance with the findings of another study undertaken by Krishnaswamy in Kerala, which found the diabetes and high blood pressure to be the most common morbidities.<sup>2</sup> However, the overall morbidity in this study was found to be 8.4% as against the 10.94% found in our study. In yet another study conducted by Datta et al in Tripura, it was

observed that majority of those who had any type of ailment were having single morbidity (74.7%).<sup>7</sup> Our study also revealed the same trend as 92.52% of the morbid population possessed only single morbidity when only 7.47% were having co-morbidity. However, unlike our study which showed the hypertension and diabetes to be the most common morbidities, the said study revealed that the most common morbidity found among the study population was acute respiratory infections (31.10%), followed by musculoskeletal disorders (17.78%), while as non-communicable diseases (NCDs) such as diabetes mellitus and hypertension constituted 13.70% of all morbidities. Similarly, our study also differs from the results of study conducted by Mane et al in a tertiary care hospital of Tamil Nadu which found musculoskeletal disorders to be the most common morbidity followed by gastrointestinal and skin disorders.<sup>8</sup>

### Limitations

In the present study, morbidity pattern was studied based on the reports as furnished by the study respondents and didn't include actual investigations of the study respondents. Besides, the present study was conducted in one area of the district. As such, the study findings can't be generalized. However, the major strength of the study is that, it is a community-based study conducted on the entire population of the selected localities.

### CONCLUSION

The common morbidities reported were hypertension, diabetes, hypothyroidism and cardiovascular diseases. The present study also revealed that morbidity was high among female population than male population. Besides, higher morbidity was also found in joint families, upper socio-economic class and elderly age group. The present study provides us with proper insights about the socio-economic status of the inhabitants of the Anchar area and the changing morbidity pattern prevailing locally and, hence, will enable us to take appropriate measures through devising and directing specific health-based interventions in our urban field practice area.

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