Journal of Carcinogenesis
Covering Genesis to Therapeutics

Journal of Carcinogenesis, ISSN: 1477-3163
2025; Vol 24: Issue 4s, https://carcinogenesis.com/

Community Health Assessment Through The Family Adoption Program: A Cross-Sectional Study From A Government Medical College In Dhule, Maharashtra

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ABSTRACT

Background: The Family Adoption Program (FAP) is a vital community-based educational initiative aimed at sensitizing undergraduate medical students to primary healthcare delivery while simultaneously assessing the health status of adopted families. In India, where dual burdens of communicable and non-communicable diseases persist, periodic community health profiling is crucial for timely interventions.

Objectives: To assess the socio-demographic profile, health-seeking behavior, nutrition, morbidity patterns, and non-communicable disease (NCD) risk factors in a semi-urban population under the Family Adoption Program at Shri Bhausaheb Hire Government Medical College, Dhule, Maharashtra.

Methods: This descriptive cross-sectional study included 540 individuals from households adopted under the FAP initiative. Data were collected using pre-tested structured proformas covering demographics, addiction, personal history, immunization, contraception, anthropometric measurements, blood pressure, fasting blood sugar, hemoglobin, and urine testing. Statistical analysis included descriptive measures and chi-square tests for associations.

Results: The majority belonged to the 31–40-year age group (19.81%), with a nearly equal gender distribution. Nuclear families constituted 57.6% of the sample. Undernutrition in children under 5 years was prevalent, with 25.8% stunting and 35.5% underweight. Among adults, 8.7% were underweight and 27.96% were overweight or obese. High-risk waist-hip ratio was more common in women (27.72%) than men (16.12%). Anemia prevalence was highest in non-pregnant women (34.7%) and children (23.3%). Raised blood pressure and abnormal blood sugar were found in 21.5% and 23.9% of participants, respectively. Significant gender differences were noted in central obesity and anemia ($p < 0.05$).

Conclusion: This study highlights the coexistence of undernutrition and rising NCD risk factors in semi-urban India. The Family Adoption Program is an effective model for early detection of public health issues and integrating community exposure in medical training. Strengthening such initiatives through continuity, counseling, and follow-up can significantly contribute to local health system strengthening..

Keywords: *Family Adoption Program, community health assessment, anemia, non-communicable diseases, malnutrition, medical education, Maharashtra, waist-hip ratio, BMI, blood pressure, India*

How to Cite: Pagar Vs, Patil Sp, Kinge Ad, Chavan Ss, Patil Pj, Akhade P, Dahire P, Jadhav C (2025) Community Health Assessment Through The Family Adoption Program: A Cross-Sectional Study From A Government Medical College In Dhule, Maharashtra, *Journal of Carcinogenesis*, *Vol.24, No.4s*, 1013-1023

1. . INTRODUCTION

Community-based medical education has long been recognized as a critical component of health professional training, especially in low- and middle-income

countries where healthcare access remains uneven. To bridge the persistent divide between tertiary medical education and grassroots public health needs, the National Medical Commission (NMC) of India introduced the Family Adoption Program (FAP) in 2021 as a structured, field-based learning initiative for MBBS students [1]. Under this program, each undergraduate medical student is expected to adopt five families during the course of their study, maintain continuous contact with them, and serve as a basic healthcare link by assessing their needs, promoting health awareness, and facilitating early diagnosis of illnesses. The FAP is designed not only as a method of experiential learning but also as a form of community service, offering dual benefits to students and the population served [2].

The adoption of families under this framework provides students with a platform for sustained engagement with real-world social determinants of health. Through repeated home visits, students interact with families across socioeconomic strata and age groups, gaining deeper insights into the barriers to health that communities face. These include challenges such as limited access to healthcare services, low health literacy, poor sanitation, undernutrition, and financial constraints. The sustained nature of the engagement – rather than a one-time survey – ensures that students are exposed to the dynamics of chronic disease progression, health-seeking behaviors, cultural attitudes, and seasonal disease patterns [3]. At the same time, communities benefit from early identification of health problems, counseling, and linkage to government health schemes and services. This reciprocal model is in line with India's Ayushman Bharat vision and National Health Policy, which emphasize community-based interventions, preventive care, and achieving Universal Health Coverage (UHC) [4,5].

Rural India continues to carry a disproportionately high burden of disease and mortality. According to the Rural Health Statistics 2021–22, rural areas account for approximately 65% of the Indian population, but remain underserved by the healthcare workforce and infrastructure [4]. Health outcomes in such areas are impacted not only by availability of services but also by awareness, transportation, income, and education. In regions like Dhule district of Maharashtra, which is largely tribal and agrarian, such disparities are more pronounced. While national surveys such as the NFHS-5 (2019–21) offer a macro-level view of public health indicators, they often fail to capture micro-level heterogeneity that is essential for local planning. For example, national estimates indicate that 35.5% of Indian children under five are stunted, and nearly 57% of women aged 15–49 years are anemic [6]. Yet, within a single village or taluka, the burden of undernutrition or hypertension can vary greatly depending on food security, local practices, and awareness levels [7].

Moreover, India faces a dual burden of disease—with infectious diseases like tuberculosis and diarrheal illnesses persisting in poorer areas, while non-communicable diseases (NCDs) such as diabetes, hypertension, and obesity rise rapidly, even in rural populations [7]. This epidemiological transition calls for nuanced, community-level data that can guide targeted interventions. However, such detailed data are seldom available at the village level. The FAP, when systematically implemented and monitored, offers a scalable model for periodic health assessment and surveillance at the household level. It enables the generation of disaggregated health data on anthropometry (e.g., body mass index, waist-hip ratio), lifestyle patterns, morbidity, personal and family health history, and access to services. Such insights are vital for public health researchers and district health authorities to understand local trends and resource gaps.

Additionally, there is growing global recognition of the social determinants of health, which include income, education, employment, food security, and housing, as key drivers of health outcomes. Through FAP-based surveys, medical colleges can gather this contextual information in real-time, which can support district-level planning and strengthen existing government programs such as the Anemia Mukt Bharat, Rashtriya Bal Swasthya Karyakram (RBSK), and NCD Screening under Ayushman Bharat. The Family Adoption Program, by embedding students in the community for years, promotes accountability, rapport-building, and a culture of early detection and continuity of care [2,8].

Shri Bhausaheb Hire Government Medical College (SBHGMC) in Dhule, Maharashtra, operationalized the FAP in 2022–23 across multiple field practice areas under the supervision of the Department of Community Medicine. MBBS students conducted regular home visits, collected baseline health and demographic data, provided health education, and performed basic clinical assessments. The program not only served as a public health intervention but also facilitated the creation of a comprehensive family-level health database, which now serves as the foundation for research, monitoring, and local action.

Therefore, the present study was undertaken to analyze the findings from this Family Adoption Program. This cross-sectional study aimed to assess the demographic profile, socio-economic status, personal and medical history, nutritional status (based on BMI and waist-hip ratio), and common morbidities such as anemia, hypertension, and diabetes among individuals covered under the FAP conducted by SBHGMC Dhule. The insights derived from this analysis are intended to inform public health planning, preventive interventions, and future medical training approaches.

2. MATERIALS AND METHODS

This was a community-based cross-sectional observational study conducted as part of the Family Adoption Program (FAP) under the Department of Community Medicine at Shri Bhausaheb Hire Government Medical College (SBHGMC), Dhule, Maharashtra. The study was carried out in Raulwadi village, which falls under the rural field practice area of the college. The FAP is an initiative promoted by the National Medical Commission (NMC) to integrate longitudinal community

exposure into undergraduate medical training.

The study population included all individuals residing in the families adopted by MBBS Phase 1 students (batch 2022–2023). Each student was assigned 5 families under the supervision of community medicine faculty. The total sample size was 540 individuals from these adopted households. Inclusion criteria comprised all permanent residents of the selected households who were present during the home visits and consented to participate. Individuals not available for interview after two repeat visits were excluded. The data collection was conducted during November to December 2023, as part of the scheduled FAP field visits.

A structured, pretested data collection proforma was used to record information during home visits. The questionnaire included the following sections:

Socio-demographic profile: age, gender, education, occupation, income, type of family, and number of family members.

Personal history: tobacco use, alcohol consumption, dietary habits, sleep, and physical activity.

Medical history: history of known chronic illnesses such as hypertension, diabetes, tuberculosis, epilepsy, and mental illness.

Anthropometric measurements: weight (kg), height (cm), body mass index (BMI), waist circumference, hip circumference, and waist-hip ratio (WHR).

Vital signs and basic investigations: Blood Pressure (BP), Random Blood Sugar (RBS), and Hemoglobin (Hb) estimation using Hemocue® system.

Each student was trained in standard procedures for anthropometry and screening. Faculty and intern doctors cross-verified the measurements and ensured accuracy. Height and weight were measured using portable stadiometers and digital weighing scales, respectively. BMI was calculated using the formula: weight (kg)/height (m^2) and interpreted using WHO Asian BMI classification. Waist-hip ratio was calculated and interpreted using gender-specific cut-offs (≥0.90 for men and ≥0.85 for women indicating high risk).

Blood pressure was measured using a digital sphygmomanometer after the participant was seated for at least 5 minutes. Two readings were taken and averaged. Elevated BP was defined as Systolic ≥140 mmHg and/or Diastolic ≥90 mmHg or a self-reported history of antihypertensive treatment. Random blood sugar was tested using a glucometer. RBS >140 mg/dL was categorized as elevated. Hemoglobin was measured for available participants using the Hemocue® method, with anemia classified using WHO criteria: Hb <13 g/dL for men, <12 g/dL for non-pregnant women, and <11 g/dL for pregnant women and children under five.

All data were entered into Microsoft Excel and cleaned for consistency. Descriptive statistics were calculated using IBM SPSS (version 25.0). Categorical variables were presented as frequencies and percentages. Continuous variables were summarized using means and standard deviations. Prevalence rates of key indicators (e.g., undernutrition, anemia, hypertension, diabetes) were calculated for relevant subgroups (age/gender).

The study was conducted as part of the regular FAP activity under the Department of Community Medicine. Verbal informed consent was obtained from each participant before data collection. Privacy and confidentiality of participants were strictly maintained. The study followed ethical principles laid down in the Declaration of Helsinki.

3. RESULTS

Demographic Profile : The study included a total of 540 individuals across adopted families. Age-wise distribution showed that the largest proportion of individuals belonged to the 31–40 years age group (19.81%), followed by 41–50 years (15.93%) and 21–30 years (15.19%). Children under 18 years accounted for 20.92% of the population, while elderly individuals above 60 years made up 14.63%. The gender distribution was nearly equal, with 273 males (50.56%) and 267 females (49.44%). Most households were nuclear families (57.59%), followed by joint families (40.93%), and a minority were three-generation families (1.48%). Family size varied, with 54.26% having more than four members, indicating a predominance of large households in the community.(Table 1)

Table 1: Demographic information

Demographic information		Number of subjects	Percentage
Age distribution	< 1 year	19	3.52
	1 - 5 years	43	7.96
	6 - 18 years	51	9.44
	21 to 30 years	82	15.19

	31 to 40 years	107	19.81
	41 to 50 years	86	15.93
	51 to 60 years	73	13.52
	61 yo 70 years	56	10.37
	More than 70 years	23	4.26
Genderwise distribution	Males	273	50.56
	Females	267	49.44
Type of family	Nuclear	311	57.59
	Joint	221	40.93
	Three Generation	8	1.48
Total number of family members	2 or less than 2	28	5.19
	3 to 4	219	40.56
	More than 4	293	54.26

Educational, Socioeconomic, and Occupational Profile : Regarding education, 36.30% had completed secondary education, while 16.67% were graduates. Illiteracy was reported in 12.96% of participants. Socio-economically, the majority of individuals belonged to the lower middle (37.59%) and middle (35.93%) classes. Only 3.89% were from the upper class. Occupational analysis revealed that 37.59% were unemployed, 21.67% engaged in semi-skilled work, 15.93% were unskilled laborers, and 13.70% held skilled jobs. A small proportion (3.33%) were professionals. Among women, 0.37% were housewives. Marital status data showed 85% were married, 12.41% unmarried, and 2.59% widowed. Most families held orange ration cards (66.67%), indicating middle economic status, followed by yellow (30.56%) and white (2.78%).(Table 2)

Table 2: Education, Socio-economic history

Education, Socio-economic history		Number of subjects	Percentage
Socio-economic status	Upper Class	21	3.89
	Upper middle class	78	14.44
	Middle class	194	35.93
	Lower middle class	203	37.59
	Lower Class	44	8.15
Education	Illiterate	70	12.96
	Primary	106	19.63
	Secondary	196	36.30
	HSC	66	12.22
	GRADUATE	90	16.67
	Postgraduate	12	2.22
OCCUPATION	Professional	18	3.33
	Skilled	74	13.70
	Semiskilled	117	21.67
	unskilled	86	15.93

	Shop	40	7.41
	housewife	2	0.37
	unemployed	203	37.59
MARITAL STATUS	Married	459	85.00
	Unmarried	67	12.41
	Widowed	14	2.59
TYPE OF RATION CARD	Orange	360	66.67
	White	15	2.78
	Yellow	165	30.56

Comorbidities, Addictions, and Nutritional Status: Table 3 shows a notable burden of non-communicable diseases, with hypertension (14.44%) and diabetes (11.30%) being the most prevalent. Addictions were reported in over 11% of participants for both tobacco use and alcohol. Immunization coverage was high (94.63%), but contraceptive use remained low (2.59%). Nutritional status revealed that while most had normal BMI (59.44%), overweight and obesity together affected nearly 32%, and underweight was seen in 8.7%. These findings indicate a dual burden of malnutrition and lifestyle diseases in the community.

Table 3: Comorbidities and personal history

Comorbidities and personal history		Number of subjects	Percentage
Comorbidities	Hypertenasion	78	14.44
	Diabetes Mellitus	61	11.30
	CVDs	19	3.52
	Hypothyroidism	16	2.96
Addictions	Alcoholism	59	10.93
	Tobacco Addiction / Smoking	63	11.67
Immuniation status in family	Complete	511	94.63
	Incomplete	29	5.37
Nutritional status (BMI)	Underweight	47	8.70
	Normal	321	59.44
	Overweight	89	16.48
	Obese	62	11.48
	Morbid obese	21	3.89

Gender-wise Distribution of Central Obesity and WHR: Analysis of central obesity showed that 72 of 273 males (26.37%) and 104 of 267 females (38.95%) had abnormal waist circumference, a statistically significant difference ($p = 0.0018$). Similarly, waist-to-hip ratio was higher among females (27.72%) compared to males (16.12%), with a statistically significant association ($p = 0.0011$), indicating a higher prevalence of central obesity and high-risk WHR among women.(Table 4)

Table 4: Comparison of waist circumference and WHR with gender

Gender	**Central Obesity**	**Normal WC**	**Total**
Males	72	201	273
Females	104	163	267
Total	176	364	540
Significance	The chi-square statistic is 9.7197. The p-value is 0.0018		
Gender	**Central Obesity**	**Normal WHR**	**Total**
Males	44	229	273
Females	74	193	267
Total	118	422	540
Significance	The chi-square statistic is 10.6329. The p-value is 0.0011		

Nutritional Indicators and Malnutrition in Children and Adults: Among children under five years, 25.81% were stunted, 19.35% wasted, 6.45% severely wasted, and 35.48% were underweight, while 8.06% were overweight. Among adults, 7.87% of women and 9.52% of men had BMI below 18.5 kg/m². Overweight and obesity (BMI > 25) was more prevalent among women (36.33%) than men (27.47%). High-risk waist-hip ratios were observed in 27.72% of women and 16.12% of men.(Figure 1)

Clinical and Laboratory Findings: Blood pressure examination revealed that 42.59% of subjects were pre-hypertensive, while 17.41% had stage 1 and 4.07% had stage 2 hypertension. Fasting blood sugar levels indicated 20.93% had impaired glucose tolerance and 2.96% were diabetic. Hemoglobin estimation showed an overall anemia prevalence of 25.56%, with 23.33% anemia in children under five, 34.70% in non-pregnant women, 33.33% in pregnant women, and 17.95% among men aged 15–49 years. Urinalysis revealed albuminuria in 1.30% and glycosuria in 2.96% of participants.(Table 6)

Gender-wise Comparison of Anemia: Anemia was significantly more prevalent in females (33.3%) than males (17.9%), with 89 of 267 women and 49 of 273 men being anemic. This association was statistically significant (p = 0.000042), underscoring gender disparities in anemia prevalence.(Table 7)

Figure 1: Anthropometric indicators

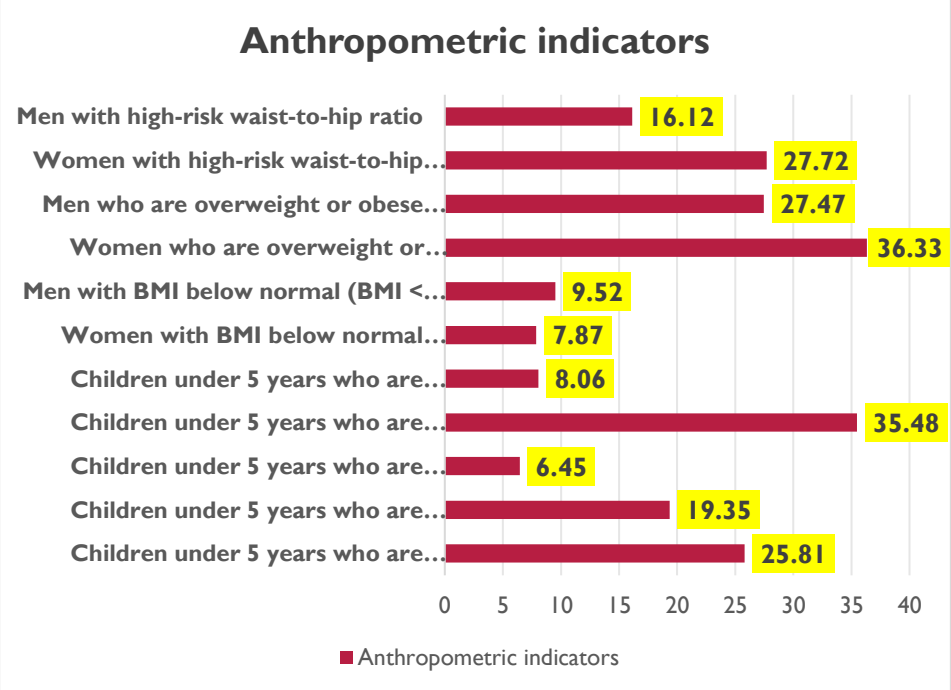

Table 5: Examination and investigation findings

Examination and investigation findings		Number	Percentage
Blood pressure examination	Normal	194	35.93
	Pre HTN	230	42.59
	Stage 1	94	17.41
	Stage 2	22	4.07
Fasting blood glucose examination	Diabetes	16	2.96
	Impaired Blood Glucose levels	113	20.93
	Normal	411	76.11
Hemoglobin levels	Anemic	138	25.56
	Normal Hemoglobin	402	74.44
	Children age 6 months to 5 years who are anaemic (< 11.0 g/dL)	7	23.33
	Non-pregnant women age 15-49 years who are anaemic (< 12.0 g/dL)	76	34.70
	Pregnant women age 15-49 years who are anaemic (< 11.0 g/dL)	6	33.33
	All women 15-49 who are anaemic	82	49.10
	Men age 15-49 years who are anaemic (< 13.0 g/dL)	49	17.95
Urine examination	Albumin	7	1.30
	Glucose	16	2.96
	Nil	517	95.74

Table 6: Comparison of hemoglobin levels with gender

Gender	Anemia	Normal Hb	Total
Males	49	224	273
Females	89	178	267
Total	138	402	540
Significance	The chi-square statistic is 16.79. The p-value is 0.000042		

4. DISCUSSION

Demographic Profile: Our community-based survey in Dhule revealed a relatively young population structure, with the majority of individuals in younger and working-age brackets and only a small fraction being elderly. This reflects India's overall age distribution – over 40% of Indians are under 25 years old, and adults ≥65 years comprise only about 7% of the population [10]. The sex distribution in our study was roughly balanced, similar to other Indian community surveys that often report women making up about half or more of participants [11]. We also observed moderate adoption of family planning in our sample. This finding aligns with national trends: India's Contraceptive Prevalence Rate (all methods) rose from ~54% to ~67% in the latest NFHS-5 (2019–21), with ~56% of married women now using modern contraceptives [12]. Overall, the demographic profile of our study (youthful age structure, balanced gender mix, and improving contraceptive use) is comparable to the broader Indian context and indicates ongoing demographic transition, whereas more developed countries have significantly older age profiles [13].

Nutritional Status: Our findings highlight a double burden of malnutrition. On one hand, undernutrition remains a concern, especially among children – a substantial proportion of under-5 children in our community were stunted,

underweight, or wasted. This mirrors national data: NFHS-5 reported 35.5% of Indian children under five years as stunted, 32.1% underweight, and 19.3% wasted [14]. In Maharashtra, child undernutrition rates are similarly high (around one-third stunted and underweight) [15]. By contrast, global averages are lower – about 22% of under-5 children are stunted and 6.7% are wasted worldwide [16] – underscoring India's persistent malnutrition challenge. On the other hand, overnutrition is emerging: we noted overweight individuals in both adult and pediatric groups. National surveys confirm a rising trend in overweight/obesity; for example, the NFHS has documented an increase in overweight/obesity among women from 10.6% in 1998 to ~24% by 2015, and similarly ~23% of men were overweight/obese by 2015 [17]. Our community's adult obesity prevalence was somewhat lower than urban averages, yet it indicates the nutrition transition extending into semi-urban/rural areas. Notably, childhood overweight, virtually absent a generation ago, is now observed in our study. This is in line with global patterns – an estimated 35 million (<5%) of under-5 children worldwide were overweight in 2024, and the prevalence of overweight among 5–19 year-olds has climbed from 8% in 1990 to 20% in 2022 [18]. The coexistence of undernutrition and obesity in our findings exemplifies the "double burden" of malnutrition described in South Asia [19]. It calls for integrated nutrition interventions that address both persistent hunger and the growing obesity epidemic. Additionally, we observed that some undernourished children had gaps in immunization. Encouragingly, India's child immunization coverage has improved (about 76% of 12–23 month-olds are fully immunized nationally [20]), but roughly one in four children still miss complete vaccination, which can indirectly worsen nutrition and health outcomes.

Central Obesity (Waist-Hip Ratio): Waist-hip ratio (WHR) measurements in our study population revealed a high prevalence of central obesity, particularly among women. This finding is corroborated by large-scale data: a recent analysis of NFHS-5 shows that 40% of Indian women and 12% of men have abdominal obesity as measured by waist circumference [21]. Such gender disparity is well documented; women in India and other populations tend to have higher central adiposity, due in part to physiological and lifestyle factors. Globally, obesity rates are also slightly higher in females (estimated 18.3% of women vs 13.7% of men with obesity according to WHO) [22], consistent with our observations of higher WHR-defined obesity in women. The rate of central obesity in our community (though significant) may be lower than in urban India, yet it is noteworthy that even rural areas are rapidly catching up [23]. Earlier Indian studies had reported abdominal obesity prevalence ranging from ~17% to 36% in various states about a decade ago [24]; our findings and the NFHS-5 data indicate that these numbers have surged. For instance, middle-aged women in their 30s–40s now form the highest-risk group for central obesity nationwide [21]. The rising WHR and waist circumference in the population are alarming because central obesity is a strong predictor of cardiometabolic diseases. Our results underscore the need for waist-centric interventions (diet and exercise) in addition to BMI-based obesity screening. The literature increasingly emphasizes WHR as a better marker of risk than BMI in Asian populations [22], and our community data concur that central obesity is prevalent and must be addressed to prevent downstream NCDs.

Anemia: The prevalence of anemia in our study was high, spanning children, women, and even men – highlighting a serious public health issue. This is in line with the persistently high anemia rates documented in India's national surveys. NFHS-5 (2019–21) reported that approximately 57% of women of reproductive age (15–49 years) were anemic, an increase from about 53% in the 2015–16 survey [25]. Anemia in children is equally widespread (over two-thirds of under-5 children in India are anemic) and even men have substantial anemia prevalence (around 25% of adult men) [26]. Our community's anemia figures mirror these national patterns. By comparison, anemia levels in India are far above global averages – roughly 30% of non-pregnant women and 37% of pregnant women worldwide are anemic [27], and the WHO estimates about 27% of the global population is affected when all groups are included [28]. The literature suggests that India's high anemia burden is multifactorial, driven by nutritional iron deficiency, parasitic infections, and other socio-demographic factors [28]. Indeed, a recent analysis found that more than 15 Indian states have anemia prevalence exceeding 55% among women in disadvantaged social groups [29]. Socio-economic and educational disparities play a major role – poorer, rural, and less-educated women (especially from scheduled caste/tribe communities) suffer higher anemia, whereas wealthier or urban women have somewhat lower rates [29]. Our findings align with these patterns, as anemia was most common in vulnerable subgroups of our population. The consistency between our community data and other Indian studies underscores that anemia remains an endemic problem. Tackling it requires strengthening iron supplementation programs, improving diets (e.g., iron, folate, B12 intake), infection control, and addressing gender inequities that contribute to poor nutrition [29].

Non-Communicable Diseases and Risk Factors: Our study assessed key NCD parameters like blood pressure and blood sugar, and the results indicate a growing burden of hypertension and diabetes in the community. We found a considerable proportion of adults with elevated blood pressure (hypertension), which is comparable to recent national estimates. A large NFHS-based analysis reported an overall hypertension prevalence of about 22.6% among Indian adults (24.1% in men, 21.2% in women) [30]. Prevalence increases sharply with age – nearly half of Indians above 60 have hypertension [30] – and we observed a similar age-gradient in our data. Urbanization is a factor too: nationally, urban adults have slightly higher hypertension rates (~25%) than rural adults (~21%) [30]. Earlier studies showed an even wider urban-rural gap (e.g. ~25% vs 10% in some reports) [31], but recent evidence suggests hypertension is now penetrating rural populations as well [30], consistent with our community findings. For diabetes, our screening found a prevalence in line with the known epidemiology of India. Currently, approximately 9–10% of Indian adults (20–79 years) are living with diabetes [32]. This proportion has more than tripled since the year 2000, reflecting the rapid rise of type 2 diabetes nationally [32]. As with

hypertension, diabetes in India shows an urban predominance – estimates indicate about 12% prevalence in urban areas vs ~8% in rural areas [33], owing to lifestyle differences.

Our community (semi-urban/rural) had a diabetes prevalence somewhat lower than big-city figures, yet it underscores that even smaller towns face a significant diabetic burden now. These NCD trends in Dhule are also evident globally. The WHO reports that hypertension affects roughly 1 in 3 adults worldwide [34] and international diabetes federations find over 10% of adults globally have diabetes [32] – our local data echo this global NCD crisis. In addition, we examined risk factors like tobacco and alcohol use ("addictions") and noted substantial usage, especially among men. Similarly, NFHS-5 data show 38% of men (and 9% of women) use some form of tobacco [35], and about 22.4% of men consume alcohol [36] (while women's alcohol use remains under 2%). Our community's pattern fits within this national profile of high tobacco/alcohol prevalence in men. These behaviors compound the risk of hypertension, cardiovascular disease, and other NCDs. On the global scale, India's tobacco use is high but not unique – an estimated 36.7% of men and 7.8% of women worldwide use tobacco [37] – underscoring that tobacco control is a universal priority for NCD prevention.

Overall, the convergence of our findings with both Indian and international studies paints a clear picture: the community is experiencing the epidemiological transition, with persistent infectious and nutritional problems now joined by rising NCDs. Multi-pronged public health action (health education, lifestyle modification, early screening, and management of hypertension/diabetes, along with tobacco and alcohol cessation programs) is urgently needed to address this dual burden of disease in our population [38].

5. CONCLUSIONS:

The present community-based cross-sectional assessment under the Family Adoption Program (FAP) revealed critical insights into the demographic, nutritional, and health profile of a semi-urban population in Dhule, Maharashtra. The population was predominantly young, with a balanced gender distribution and moderate nuclear family predominance. The study highlighted a double burden of malnutrition, with coexisting undernutrition among children and rising overweight/obesity among adults, especially women. Central obesity, measured by waist-hip ratio, was significantly prevalent, suggesting increased cardiometabolic risk even in rural and semi-urban areas.

High prevalence of anemia among women, children, and even men reaffirms its status as a persistent public health challenge. The study also underscored the increasing burden of non-communicable diseases, with notable proportions of hypertension and diabetes, particularly in the older age groups. Risk behaviors such as tobacco and alcohol consumption were common, particularly among men, further compounding the NCD risk.

These findings reflect the ongoing epidemiological transition in India, where infectious diseases and nutritional deficiencies now coexist with lifestyle-related disorders. The Family Adoption Program proves to be a valuable model for primary care-oriented medical colleges to not only identify priority health problems but also build rapport and initiate targeted health promotion in their adopted communities. Strengthening such initiatives with continued community engagement, regular health education, screening, referral linkage, and follow-up will be vital to achieving long-term improvements in community health outcomes.

6. LIMITATIONS:

This study had certain limitations. First, although the data collection was comprehensive, it was limited to the households adopted under the Family Adoption Program in a single urban health training center, which may not fully represent the wider population of Dhule district or other rural/urban settings. Second, certain health parameters such as biochemical investigations (lipid profile, renal function) and clinical diagnoses were not feasible in the field setting due to logistic constraints, thereby limiting in-depth NCD risk profiling. Third, anthropometric and laboratory measurements were conducted during outreach visits using point-of-care methods, which may introduce minor measurement errors despite standardization. Additionally, the reliance on self-reported history for chronic diseases, addictions, and contraceptive practices may have introduced information bias. Despite these limitations, the study offers valuable community-level insights and demonstrates the feasibility of integrating preventive health assessments into undergraduate medical education.

7. CLNFLICT OF INTEREST:

None to declare

8. SOURCES OF FUNDING:

None

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