

# A Cross-sectional Study of Health Status and Health-seeking Behavior among Nursing Students in a Tertiary Care Hospital in Mumbai, India

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## ABSTRACT

**Introduction:** Nursing is the vital element of health care system and nursing students are the most essential force of health care services. Nursing students are a very active group which comes in first line of contact with the patients. Nursing students are also an adolescent and young adult group and hence, has to be given more attention with regard to their dietary habits, health status, and behavioral development.

### Objectives:

- To assess the health status, sociodemographic determinants, and the health-seeking behavior among nursing students.
- To study the association of dietary habits with occurrence of anemia in nursing students.

**Study design:** The present study is a descriptive study, using universal sampling technique, which was conducted cross-sectionally for a period of 4 months after ethics committee approval on the nursing students of the school of nursing in a tertiary hospital which imparts teaching in Mumbai. The total number of nursing students of first-, second-, and third-year batch was 280. Since five out of them did not consent to participate in the study, the sample size was 275.

**Results:** All 275 study participants were females. The participants were found to have a mean age of 19.76 years ( $\pm$ standard deviation of 1.36).

As per the modified BG Prasad socioeconomic scale (per capita income) with current price index 2017, 17.45% (48) belonged to upper class, 41.45% (114) belonged to upper middle class, 22.9% (63) belonged to middle class, 13.45% (37) were of lower middle category, and 4.72% (13) belonged to lower class.

As per the body mass index (BMI), 45% of the students are underweight and 9% are obese. Almost 70% of the nursing students were found to be anemic.

Majority, i.e., 257 (94%) and 189 (69%), of the nursing students refer to the same tertiary hospital, 2 (0.7%) and 52 (19%) of them take self-medications, and 14 (5%) and 23 (8.4%) of them refer to general practitioners for minor and major illness.

Almost 30% of the students gave history of musculoskeletal ailments. Of them, 49 (18%) had backache, 11 (4%) of them had pain in the neck and shoulder, and 4.4% (12) had knee pain; 64

(23.3%) suffered from headache and 26.2% (72) had complaints of refractive error; 88 (32%) and 14 (5%) of the nursing students suffered from dysmenorrhea and leukorrhea. Almost 15% (41) nursing students had fatigue; 4 (1.5%) had coexisting medical problems like tuberculosis and asthma.

**Conclusion:** Awareness about healthy dietary practices and faulty eating habits needs to be imparted to the students. The students need to be trained and made aware of food items rich in Iron and food items which inhibit iron absorption along with importance of balanced diet.

**Keywords:** Health status, Hemoglobin levels, Iron deficiency anemia, Nursing students.

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## INTRODUCTION

“Nurses are the Heart of Health Care”

—Donna W Cardillo

Nursing is a noble profession and nursing students is an important group that contributes to the critical component of professional health services. The nursing workforce is the largest component of health care delivery in India. The Macroeconomics and Health National Commission acknowledge that nurses and midwives can make major contributions to health care development and achievement of the Millennium Development Goals.<sup>1</sup>

Nursing students are a very active group which comes in first line of contact with the patients. Hence, it is essential to empower the nursing students to face the challenges in health care. Nursing students fall into category of adolescents and also young adults and hence, have to be given more attention with regard to their dietary habits, health status, and behavioral development. Adolescence is a very critical period in an individual's life and especially with girls due to the initiation of menarche. Iron deficiency anemia is very common in Indian women. This can affect health in a long term due to its impact on growth, decreased immunity and also impairment in learning and development.

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It is essential, therefore, to assess the health status and health-seeking behavior of nursing students and study their sociodemographic factors. The dietary habits and hemoglobin (Hb) levels will help in the assessment of their anemic status. This will help in early identification of risk factors among nursing students considering their role as future nurses and role models in public health intervention.

## MATERIALS AND METHODS

The present study which is a cross-sectional descriptive study was conducted for 4 months. It was conducted by universal sampling technique on the nursing students who were undergoing general nursing midwives nursing diploma course of the nursing school at a tertiary care hospital in Mumbai. There are no exclusion criteria. Total number of students in the first-, second-, and third-year batch was 280. Since 5 out of them did not participate in the study, the sample size was 275.

Ethics committee approval was obtained and permissions were sought from the required authorities before starting the study. Written informed consent was taken prior to the data collection. Interviews of the participants were taken when they were not on duty. An interview schedule which was semi-structured and validated was used, in which details of health status, dietary habits and health-seeking behavior were recorded. The reports of the investigations, namely Hb, were also recorded to assess their anemic status. X-ray chest was also done as a part of routine investigation. Data analysis was done in Microsoft Excel and presented with help of graphs and tables by using descriptive statistics.

## OBSERVATIONS AND RESULTS

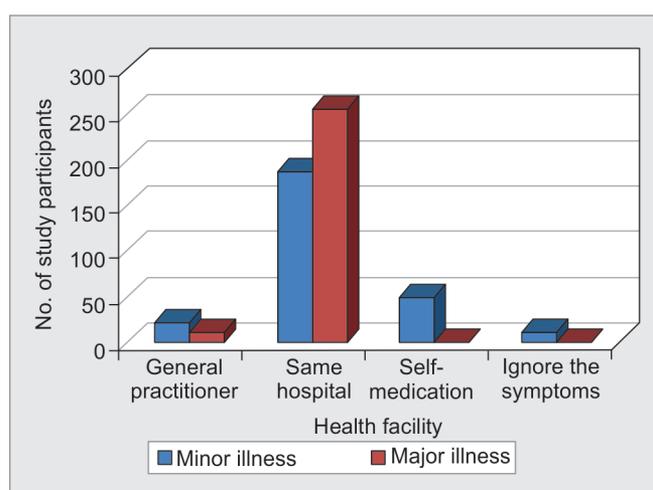
All 275 study participants were females. The participants were found to be having a mean age of 19.76. The majority of the nursing students hailed from the rural districts of Maharashtra; hence, modified BG Prasad socioeconomic scale (per capita income) with current price index 2017 was used<sup>2</sup>; 17.45% (48) belonged to upper class, 41.45% (114) belonged to upper middle class, 22.9% (63) belonged to middle class, 13.45% (37) were of lower middle-class group, and 4.72% (13) belonged to lower class.

Table 1 shows the percentage distribution of morbidity pattern of the nursing students.

Table 1 depicts that almost 18% (49) of the students complained of pain in the neck and 14.9% (41) complained of fatigue; 89.8% (247) of nursing students attained menarche between 13 and 16 years of age; 8% (22) attained menarche between 9 and 12 years, 14.37 years being the average age of menarche; 32% (88) of the nursing students

**Table 1: Morbidity pattern**

Health ailments	Frequency	Percentage	
Musculoskeletal	Backache	49	17.8
	Neck pain	10	3.6
	Knee pain	12	4.4
	Shoulder pain	11	4.0
Refractive error	72	26.2	
Menstrual	Dysmenorrhea	88	32
	Irregular menses	10	3.6
	Heavy menses	8	2.9
Gynecological	Leukorrhea	14	5.1
Headache	64	23.3	
Others	Fatigue	41	14.9



**Graph 1: Number of study participants visiting the hospital for major and minor illness**

had dysmenorrhea, 5.1% (14) suffered from leukorrhea, 3.6% (10) had irregular menses, and 2.9% (8) had heavy menses. Almost 23% (64) suffered from headache and 26.2% (72) out of 275 nursing students gave history of refractive error.

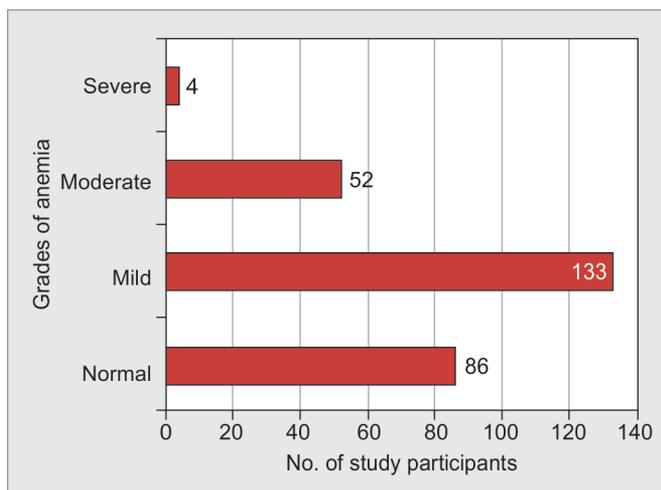
Graph 1 shows that majority of the nursing students, i.e., 93.5% (257) and 68.7% (189), visit the same hospital for treatment and management for major and minor illnesses; 0.7% (2) and 18.9% (52) take self-medication for major and minor illness; 0.7% (2) and 4% (11) ignored their symptoms during major and minor illness.

## Hemoglobin Levels of Nursing Students depicting Grades of Anemia

Graph 2 shows that 68.8% (189) of the 275 nursing students were anemic with 48.4% showing mild grade of anemia; 4 (1.4%) nursing students had severe grade of anemia.<sup>3</sup>

Table 2 shows that almost 46% of the nursing students are underweight.

Table 3 shows that 88.3% (243) of the nursing students who consumed mixed diet had BMI of less than 18.5% (chi-square test p-value is 0.006, i.e., less than 0.05, hence, significant).



**Graph 2:** Hemoglobin levels of nursing students depicting grades of anemia

**Table 2:** Classification as per grades of BMI

Grades	Class	Frequency	Percentage
Less than 18.5	Underweight	133	49
18.5–24.9	Normal	130	47
Greater than 25.0	Overweight	–	–
25.0 to 29.99	Preobese	12	4
		275	100

**Table 3:** Effects of diet on BMI

BMI category	Veg diet	Mixed diet	Total
<18.5	7	126	133
18.5–24.9	23	107	130
25–30	2	10	12
Total	32	243	275
Percentage	11.63	88.37	100

**DISCUSSION**

This study was conducted to assess the health status, understand the health-seeking behavior, and sociodemographic characteristics of the nursing students.

Health maintenance of adolescents and adults is an inseparable part of primary health care.<sup>4</sup> Nursing students fall mainly in the category of both adolescents as well as young adults. Adolescence and young adulthood are significant periods of growth and maturation where there is occurrence of changes which are unique along with formation of patterns which get established in adult life. Since many serious diseases have their origin in young age, this group has to be given more attention. One-fifth of the world’s population is comprised of young population. Close to 85% of 1.06 billion men and women between ages of 15 and 25 years live in developing countries.<sup>4</sup>

Nurses are more prone to musculoskeletal disorders (MSDs) due to their occupation. Hospital nursing tasks are generally complex and involve many physical activities that can lead to acute and chronic work-related

MSDs. A study done in Ahmedabad, India, shows that the prevalence of MSDs was found to be 76% among nurses. Prevalence of pain in neck was 16, 16% had pain in shoulders, 33% had knee pain, and 24% had backache.<sup>5</sup>

Nursing students also give complaints of MSDs. Strategies must be developed and given utmost priority to prevent this important public health problem among future generation of nursing students.<sup>1</sup> In a study of MSDs among first-year students of nursing college from the University of Ghana, it was found that 29.3% had backache, 13.4% had neck pain, and 15.3% had pain in hands and wrists.<sup>1</sup>

In a study of MSDs conducted in detail among Indian nurses of Indian Army, it was found that MSDs were more widespread among nurses in the age between 31 and 40 years, followed closely by nurses in the age between 21 and 25 years. Nurses from 21 to 40 age group are engaged in active patient care services and suffer maximally from MSD. In the age group of 21 to 25 years, 19.9% had neck pain, 14.8% had shoulder pain. 15.9% had knee pain, 40% had backache, and 15.2% in wrists and hands.<sup>2</sup>

In our study, we found that 29.8% of the students gave a history of musculoskeletal ailments of which 17.8% (49) had backache, 4.4% had knee pain, 11 (4.0%) had pain in shoulder, and 10 (3.6%) had neck pain; 26.47% (72) of the nursing students had refractive errors and (64) 23.3% suffered from headache; 88 (32%) had dysmenorrhea, 10 (3.6%), 8 (2.9%) had irregular and heavy menses, and 5.1% (14) had leukorrhea; 14.9% (41) complained of fatigue.

Medical dictionary by Mosby explains health behavior as “An health action taken by a person to attain or regain good health and prevent illness.” Health choices and beliefs of a person are reflected by their health behavior. Common health behaviors are exercising regularly, consuming a diet which is balanced, and obtaining necessary inoculations.<sup>6</sup>

In the study which assesses the health-seeking behavior of nursing students of senior levels in Saudi Arabia, it was found that almost 97.3, 94.6, and 93.2% of the nursing students did not visit the doctor for headache, constipation, and cough; 67.6, 60.3, 73, 83.8, and 78.4% visited the doctors for chest pain, abdominal pain, food poisoning, skin rash, and toothache respectively. Almost 95% of the students took medication without doctor’s prescription; 10% of the students declared that they were not concerned about health, though they were aware of what proper health behavior was.<sup>7</sup> In our study, it was found that that majority of the nursing students, i.e., 93.5% (257) and 68.7% (189) visit the same hospital for treatment and management for major and minor illness; 0.7% (2) and 18.9% (52) take self-medication for major and minor

illness; 0.7% (2) and 4% (11) ignored their symptoms during major and minor illness.

Adolescence (10–19 years) is a “coming of age” as children mature into young adults. Anemia is mostly seen in adolescents. Iron deficiency anemia can have negative effects on growth, increase susceptibility to infection, and also impair mental development and learning.<sup>8</sup> Adolescence and young adulthood are significant periods of growth and maturation, depicting occurrence of changes which are unique, and patterns which are formed during this period are reflected in adult life. This age group is important because most of the chronic diseases in adulthood have their origin in the young age. One-fifth of world’s population comprises of young adults; 85% of 1.061 billion young men and women between the ages of 15 to 24 years live in developing countries.<sup>4</sup>

The prevalence of anemia is high in girls (Hb lower than 12 gm%), i.e., 56%, and in boys (Hb less than 13 gm%), it is 30% in the age group 10 to 19 years as per reports of National Nutrition Monitoring Bureau and National Family Health Survey-3 (NFHS-3) in India.<sup>9</sup>

When an important health indicator like prevalence of anemia is used with other iron status measurements, the Hb levels can give information about the severity of iron deficiency.<sup>3</sup>

The nutritional anemia’s World Health Organization<sup>3</sup> study group published the anemia cut-off in 1968 while the cut-off defining grades of anemia, i.e., mild, moderate, and severe, were first presented in the 1989 guide, “Preventing and controlling anaemia through primary health care,” which was then modified for pregnant, nonpregnant women, and children under 5 years of age.

In a study of iron deficiency among nursing students by Mehta,<sup>10</sup> it was found that iron deficiency anemia and iron deficiency were found in 20.3 and 27.5% in the students respectively. The nursing workforce is the largest component of health care delivery in India. The Macroeconomics and Health National Commission acknowledge that nurses and midwives can make major contributions to health care development and achievement of the Millennium Development Goals.<sup>11</sup>

In a study by Shah et al<sup>9</sup> in the community in tribal areas of Gujarat, baseline Hb levels were checked in 141 adolescent girls and anemia was found to be prevalent in 79.5% of them.

In our study, it was found that 68.8% (189) of the nursing students had Hb levels below 12 gm%, of whom 48.4% (133) had mild grade of anemia. The frequency of consumption of iron-rich foods like jaggery, green leafy vegetables, dry fruits, nuts, and resin was less among the nursing students. Out of the 4 (1.45%) students who had severe grade of anemia, three complained of heavy menses. One of them had recently completed treatment

of tuberculosis and pleural effusion. Junk food and beverages were found to be more frequently consumed by them.

The commonly used simple index to classify underweight, overweight, and obesity in adults based on height and weight is BMI. It is defined as weight in kg divided by height in m<sup>2</sup> (kg/m<sup>2</sup>).<sup>6</sup>

In another study among nursing students, it was found that the problem of obesity among nursing was alarming; 30.4% of the nursing students were overweight and 8% were obese.<sup>4</sup>

In our study, it was found that 49.4% (133) of nursing students were underweight and 4% (12) were obese.

Our study showed a significant finding that 88.3% (243) of the nursing students who consumed mixed diet had BMI of less than 18.5%. Though 88.4% (243) of the nursing students take breakfast daily and 77.5% (213) of the nursing students do not miss meals usually, consumption of junk food was found in almost 71% (196) of the nursing students.

## CONCLUSION

This study enables us to lay emphasis on eating iron-rich foods and balanced diet to prevent anemia which in turn would prevent further morbid health disorders in future in the nursing students which is the most vital component of professional health services. The iron-folic acid supplementation along with deworming is essential to increase the levels of Hb of the students. Health education about good and faulty eating habits, avoidance of food items which inhibit iron absorption should be provided to the students which will increase their awareness and thus guide them to healthy eating practices.

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