

UNDERGRADUATE MEDICAL STUDENTS' PERCEPTIONS AND OPINIONS TOWARDS INTRODUCTION TO CLINICAL MEDICINE

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ABSTRACT

Background: Introduction to Clinical Medicine (ICM) is a relatively new and innovative approach for teaching medicine. ICM engages medical students in their understanding of the disease process from clinical feature to diagnosis, studying abnormalities of complaints, examination. The aim of this study was to find the undergraduate medical students' perceptions and opinions towards Introduction towards Clinical Medicine.

Methods: An analytical cross-sectional study was conducted among MBBS students using non-probability sampling technique from 22nd June 2022 to 15th October 2022. Ethical approval was taken from institutional review committee of College of Medical Sciences. Data was analyzed using descriptive and inferential statistical tools in SPSS-20. P-value <0.05 was considered as statistically significant.

Results: This study was carried out among 220 medical students. The mean and standard deviation of age of students was found to be 22.50±1.89 years. The ratio of gender of students was almost equal. The positive level of perception was found to be 43.6% with 95% CI 37.04% to 50.15%. More than 99% student's choice was to read clinical medicine. None of the variables was found to be statistically significant with the level of perception.

Conclusions: Most of the students are strongly agree with the relevance and significance of this subject introducing in MBBS level. Very minimum percentage students had making future plan to read basic science subject while more than half of the students had future plan to choose ICM as a carrier subject.

INTRODUCTION

Sir William Osler, considered the father of modern medicine, emphasized the teacher's role in helping students to observe and reason. He recommended abolishing the traditional lecture method of instruction. Medical education is evolving in response to scientific advances and societal needs. A well-organized comprehensive knowledge domain has practical implications in clinical problem solving, and appropriate teaching and learning methods play an important role in achieving the educational goals.¹

The teaching-learning system practiced in Nepal is traditional and incorporates didactic learning at its core.² A well-organized comprehensive knowledge has practical implications in clinical problem solving, and appropriate teaching play an important role in achieving the educational goals.³ As there is a tremendous growth in advancement of medical science and technology, it is the time to bring medical specialties into focus.⁴

The MBBS curriculum in Nepal is divided into two Parts, Pre-Clinical sciences for first and second year and the Clinical

Sciences include the curriculum of the remaining two and a half years.⁵ The First year and the Second year cover Integrated Pre-Clinical Sciences (Anatomy, Physiology, Biochemistry, Microbiology, Pathology and Pharmacology), Community Medicine and Introduction to Clinical Medicine (ICM) which are taught in an integrated, organ-system based manner during the first four semesters.⁶

Introduction to Clinical Medicine (ICM) is a relatively new and innovative approach to teaching medicine. ICM engages medical students in their understanding of the disease process from clinical feature to diagnosis. Students begin studying abnormalities of complaints, examination, and laboratory findings; i.e., signs, symptoms, and laboratory investigations then students' progress towards diagnosis.⁷

Therefore, the purpose of this study was to evaluate student's perception and opinion towards Introduction to Clinical Medicine (ICM). The study will let us know the importance of ICM and collective knowledge to understand the clinical conditions.

METHODS

An analytical descriptive cross-sectional study was conducted among MBBS student in College of Medical Sciences and Teaching Hospital, Chitwan, Nepal during 22nd June 2022 to 15th October 2022. Ethical approval for this research was taken from Institutional Review Committee of College of Medical Sciences and teaching hospital (Ref No. COMSTH-IRC/2021-20/1).

Data was collected using self-structure questionnaire via Google form. Research conducted by Daniel Teshome showed that 73.9% students had positive perception. Sample size was calculated by taking this as a prevalence, $p = 0.739\%$, $q = 0.261\%$ and margin of error as 6%. Using formula, $n = Z^2 * p * q / e^2 = (1.96)^2 * 0.739 * 0.261 / (0.06)^2 = 206$. By adding 10% non-response error, this research was conducted among 220 students. Pilot study was done among 10% students. The Cronbach's alpha value for the questionnaire was 0.682 indicating a good level of internal consistency while for face validity of the tool, questionnaire was given to research expert.

Consent was taken from students via google form before fill up the responses. After finalizing the questionnaire, it was distributed among MBBS students (Second year to final year) using non-probability (convenient) sampling technique through google form.

After collecting the data from the students, it was checked for completeness and accuracy. Collected data was imported to SPSS-20 for further analysis. Data was analyzed using descriptive and inferential statistical tools. In the descriptive statistics for categorical variables frequency and percentage was calculated. While for continuous variable mean and standard deviation was calculated. Point prevalence and 95% Confidence Interval were calculated for the level of perception in the inferential statistics. To find the association between levels of perception with selected variables chi-square test was applied. P-value <0.05 was considered as statistically significant.

RESULTS

The total number of respondents was 220. Among the 220 respondents, the mean age of respondents was 22.50±1.89 years, (48.2%) were female and (51.8%) were male. Majority of the respondents were Brahmin/Chhetri by ethnicity (49.1%) followed by Terai/Madhesi (20.9%). Only 0.9% of the respondents belonged to Muslim. 96.4% were Hindu followed by 2.7% Buddhist by religion. Among 220 respondents, 74.5% were Nepali and 25.5% were Indian (Table 1).

Out of 220 participants, 26.4% were scholarship students, 28.2% were II MBBS students, 49.5 % were III year MBBS students and 22.3% were Final year students. Among them, 99.1% have planned to take Clinical Science in future were as 0.9% choose Basic Science. About joining MDGP, 62.7% choose maybe and 6.4% were not interested. While, 1.8% had reason about family pressure and less chance of promotion (Table 2).

Table 1: Sociodemographic characteristics of the students (n=220)

Variables	Frequency (%)
Age	
<22	120(54.5)
≥ 22	100(45.5)
Mean (SD) years	22.50±1.89 years
Gender	
Female	106(48.2)
Male	114(51.8)
Ethnicity	
Brahmin/Chhetri	108(49.1)
Janajati	14(6.4)
Muslim	2(0.9)
Newar	18(8.2)
Others	32(14.5)
Terai/Madhesi	46(20.9)
Religion	
Buddhist	6(2.7)
Hindu	212(96.4)
Islam	2(0.9)
Nationality	
Indian	56(25.5)
Nepali	164(74.5)

Table 2: Information of students towards the academic level (n=220)

Variables	Frequency (%)
Scholarship	
Yes	58(26.4)
No	162(73.6)
Level of education	
Final year	49(22.3)
II MBBS	62(28.2)
III MBBS	109(49.5)
Future plan	
Basic Science	2(0.9)
Clinical Science	218(99.1)
Join MDGP	
May be	138(62.7)
Not interested	14(6.4)
Not Sure	36(16.4)
Of course	32(14.5)
Reasons	
Family pressure	4(1.8)
Less chance of promotion	4(1.8)
Less financial growth	12(5.5)
Not interested	24(10.9)
Others	52(23.6)

Table 3: Perception of students towards Introduction to Clinical Medicine (ICM) (n=220)

Statement	Strongly agree	Agree	Neutral	Disagree	Strongly disagree
Introduction to Clinical Medicine (ICM) is an important subject of medical science.	134(60.9)	74(33.6)	8(3.6)		4(1.8)
Studying ICM is relevant and beneficial in later clinical years	130(59.1)	72(32.7)	16(7.3)		2(0.9)
ICM as a discipline has been neglected in Undergraduate level	48(21.8)	106(48.2)	52(23.6)	12(5.5)	2(0.9)
Every good clinician requires a sound knowledge of ICM.	126(57.3)	80(36.4)	10(4.5)		4(1.8)
Lack of Basic science knowledge in a ICM makes the subject uninteresting	58(26.4)	114(21.8)	28(12.7)	16(7.3)	4(1.8)
Rather than learning ICM, medical students should concentrate on other Basic sciences courses.	4(1.8)	10(4.5)	66(30)	118(53.6)	22(10)
ICM is easy to study on my own level	10(4.5)	64(29.1)	74(33.6)	66(30)	6(2.7)
ICM is more relevant if taught as an integrated curriculum with other clinical specialties	68(30.9)	114(51.8)	32(14.5)	4(1.8)	2(0.9)
Only a limited knowledge of ICM is required for satisfactory medical practice		14(6.4)	46(20.9)	118(53.6)	42(19.1)
I would like to take up ICM as a career choice	6(2.7)	54(24.5)	130(59.1)	24(10.9)	6(2.7)
Teaching and explaining the concepts of ICM to students will give as much satisfaction as treating patients	36(16.4)	88(40)	72(32.7)	22(10)	2(0.9)
It is difficult to understand and retain ICM	2(0.9)	30(13.6)	50(22.7)	124(56.14)	14(6.4)
Time allocation for teaching ICM is not enough	48(21.8)	122(55.5)	38(17.3)	122(55.5)	48(21.8)
Clinical cases can be manage using knowledge gained in ICM	32(14.5)	136(61.8)	26(11.8)	26(11.8)	
ICM is necessary for understanding other Clinical Subject	58(26.4)	140(63.6)	20(9.1)		

This research showed that, 43.6% (with 95% CI 37.04% to 50.15%) students had positive level of perception towards ICM.

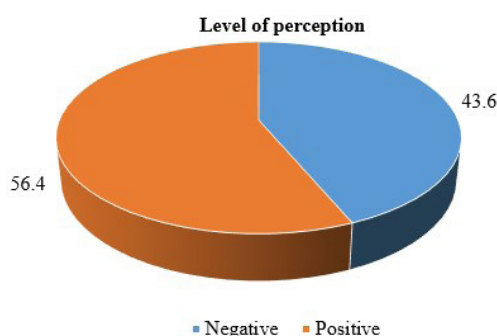


Figure 1: Perception of students (n=220)

Regarding association between level of perception with selected socio-demographic variables, among students age < 22, had negative perception (43.3%) and positive perception (56.7%), 49.1% of female had negative perception and 50.9% had positive perception, 38.6% of male had negative perception and 61.4% had positive perception, 50% Brahmin had both negative and positive perception, 44.3% Hindu had negative perception and 55.7% had positive perception, 46.4% Indian had negative perception and 53.6% had positive perception, 42.7% Nepali had negative perception and 57.3% had positive perception, 41.4% among the scholarship students had negative perception and 58.6% had positive perception. None of the variables were found to be statistically significant (Table 4).

Table 4: Association between level of perception with selected sociodemographic variables (n=220)

Variables	Level of perception		p-value
	Negative	Positive	
Age			
<22	52(43.3)	68(56.7)	0.92
>22	44(44)	56(56)	
Gender			
Female	52(49.1)	54(50.9)	0.11
Male	44(38.6)	70(61.4)	
Ethnicity			
Brahman/Chhetri	54(50)	54(50)	0.62
Others	42(37.5)	70(62.5)	
Religion			
Hindu	94(44.3)	118(55.7)	0.29
Others	2(25)	6(75)	
Nationality			
Indian	26(46.4)	30(53.6)	0.62
Nepali	70(42.7)	94(57.3)	
Scholarship			
Yes	24(41.4)	34(58.6)	0.68
No	72(44.4)	90(55.6)	

Level of Significance at 0.05

DISCUSSION

The learning process of medical students is influenced by their attitude and perception towards different subjects. In conventional curriculum, basic medical sciences including

ICM generally provide basement for students to construct the mansion of clinical knowledge and skills.

In the study, the mean age of respondents was 22.50±1.89 years, (48.2%) were female and (51.8%) were male. Majority of the respondents were Brahmin/Chhetri by ethnicity (49.1%) followed by Terai/Madhesi (20.9%). Only 0.9% of the respondents belonged to Muslim. 96.4% were Hindu followed by 2.7% Buddhist by religion. Among 220 respondents, 74.5% were Nepali and 25.5% were Indian. In a study conducted by Shankar PR et al. the majority of the respondents (88.9%) were 19, 20 and 21 years of age. Seventy-eight respondents (57.8%) were male. Forty-seven respondents (34.8%) were Nepalese while 76 (56.3%) were from India.⁸

In the study 26.4% were scholarship students, 28.2% were II MBBS students, 49.5 % were III year MBBS students and 22.3% were Final year students. A study conducted by Shah DK et al. showed that twenty seven out of 232 were scholarship awarded students by ministry of education of Nepal and others were self-financed for their education.⁹

Study showed that, 99.1% have planned to take Clinical Science in future were as 0.9% choose Basic Science. Shah DK showed that 99.1% have planned to take Clinical Science in future were as 0.9% choose Basic Science.⁹ Similar result was shown in a study conducted by Kumar A et al. in medical students of different countries.¹⁰ The reason they mentioned seems very logistic that is because of limited opportunity in basic science restricted to teachings, research and diagnostic laboratories. Moreover before joining the medical school in our country, dream of most of the students remains to be a famous clinician rather than an academician or researcher in the future in whom there is more social respect and opportunities to earn. Regarding the Perception of students towards Introduction to Clinical Medicine, 60.9% strongly agreed on the statement "ICM as an important subject of medical science", 59.1% of them strongly agreed on "Studying ICM is relevant and beneficial in later clinical years", 48.2% of them agreed that "ICM as a discipline has been neglected in undergraduate level", 57.3% strongly agreed on the statement "Every good clinician requires a sound knowledge of ICM", 21.8% agreed

that "lack of basic science knowledge in ICM makes the subject uninteresting", 53.6% of them disagreed that "Rather than learning ICM medical students should concentrate on other basic sciences course", 33.6% were neutral about whether "ICM is easy to study on their own level", 51.8% agreed on "ICM is more relevant if taught as an integrated curriculum with other clinical specialities", 53.6% disagreed on the statement that "Only a limited knowledge of ICM is required for satisfactory medical practice", 59.1% were neutral about "whether they would like to take up ICM as a career choice", 40% of them agreed on "Teaching and explaining the concepts of ICM to students will give as much satisfaction as treating patients", 56.14% disagreed on "It is difficult to understand and retain ICM", 55.5% agreed about "time allocation for teaching ICM is not enough", 61.8% agreed that "Clinical cases can be managed using knowledge gained in ICM" and 63.6% agreed that "ICM is necessary for understanding other Clinical Subject".

For level of perception of students, 56.4% had positive perception about ICM where as 43.6% had negative perception. In a study conducted by Teshome D et al. showed that there were 66.7% of the students who considered anatomy as clinically relevant, whereas 53.6% and 47.1% considered physiology and biochemistry, respectively, to be clinically relevant.¹¹

CONCLUSION

This study concluded that nearly half of the medical students had positive perception towards ICM. Most of the students are strongly agree with the relevance and significance of this subject introducing in MBBS level. Very minimum percentage students had making future plan to read basic science subject while more than half of the students had future plan to choose ICM as a carrier subject. The hindering factors for choosing these subject was found to be less financial growth and promotion. The level of perception is not affected by sociodemographic variables.

CONFLICT OF INTEREST: None

FINANCIAL DISCLOSURE: None

REFERENCES:

1. Yadav SA, Poudel S, Gautam S, Jaiswal SK, Baskota S, Adhikari A, Duwadi B, Baral N, Yadav S. Effectiveness of Clinical Presentation (CP) Curriculum in teaching clinical medicine to undergraduate medical students: A cross-sectional study. *F1000Research*. 2022;11.[DOI]
2. Gautam N, Dhungana R, Gyawali S, Dhakal S, Pradhan PMS. Perception of Medical Students Regarding Tribhuvan University-Institute of Medicine MBBS Curriculum and Teaching Learning Methods in Nepal. *Kathmandu Univ Med J*.
3. Adhikari Yadav S, Poudel S, Gautam S, Jaiswal SK, Baskota S, Adhikari A, et al. Effectiveness of Clinical Presentation (CP) Curriculum in teaching clinical medicine to undergraduate medical students: A cross-sectional study. *F1000Res*. 2022 Feb 10;11:165. [DOI]
4. Amgain K, Budhathoki S. An innovative, integrated, and community based MBBS Curriculum: a humanistic and holistic approach for Karnali Academy of Health Sciences. *Journal of Karnali Academy of Health Sciences*. 2018;1(3):52-60. [DOI]
5. Syllabus of KU MBBS PDF | PDF | Gene | Acetylcholine [Internet]. Scribd. [Cited 2022 Oct 18]. Available from: <https://www.scribd.com/document/371405980/269376388-Syllabus-of-KU-MBBS-pdf> [LINK]
6. Roy B, Banerjee I, Sathian B, Mondal M, Kumar SS, Saha CG. Attitude of Basic Science Medical Students towards Post Graduation in Medicine and Surgery: A Questionnaire based Cross-sectional Study from Western Region of Nepal. *Nepal Journal of Epidemiology*. 2011;1(4):126-34. [DOI]
7. Curriculum for MBBS program of PAHS 2010: Accessed from pahs.edu.np
8. Shankar PR, Dubey AK, Subish P, Upadhyay DK. Medical student attitudes towards and perception of the basic sciences in a medical college in western Nepal. *Med Sci Educ*. 2007;17:85-92.

9. Shah DK, Jha RK, Sah AK, Sah P, Poudel KP, Dhungana GP. Students' Attitude and Perception towards Basic Sciences in a Medical School of Nepal: A Cross-sectional Study. *Journal of Contemporary Medical Education*. 2015 Nov 26;3(4):165-9. [\[DOI\]](#)
10. Kumar A, Mitra K, Nagarajan S, Poudel B. Factors influencing medical students' choice of future specialization in medical sciences: a cross-sectional questionnaire survey from medical schools in China, Malaysia and regions of South Asian Association for Regional Cooperation. *N Am J Med Sci*. 2014;6(3):119-25. [\[DOI\]](#)
11. Teshome D, Tiruneh C, Berhanu L, Berihun G. Medical students' attitude and perception towards basic medical science subjects at Wollo University, Northeast Ethiopia. *Advances in Medical Education and Practice*. 2021;12:431. [\[DOI\]](#)