

Inequality in Access to Medical Education in India: Implications for the Availability of Health Professionals

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Abstract

This study examines the access of students from diverse backgrounds to medical education in India. It shows how inequalities existing in society may entail significant social injustices with regard to access to a career in medicine. The study is based on data from secondary sources. The major part of the analysis is from the Periodic Labour Force Survey, 2019–20; All India Survey on Higher Education, 2019–20; and National Sample Survey data on Social Consumption, Education 2017–18. It is observed that the availability of health professionals is very low overall but it is even lower among underprivileged groups. There are indications of a better share of salaried health professionals among underprivileged caste/ethnic groups probably due to the presence of affirmative action but inequality prevails in self-employment and high quality occupations, thus reflecting the inequality prevalent in society. However, the pattern among Muslims is different from the caste/ethnic groups as the share of regular salaried workers is lower and self-employed is higher among Muslims. The study shows that access to medical courses is linked to family background depicted by caste/ethnicity and religious identities. The availability of medical education in general is very low. The situation is further aggravated for students from underprivileged backgrounds. The high cost of medical courses combined with the dominance of self-financed courses and private unaided institutions may make it inaccessible to students from weaker sections of society. In fact, the probability of attending a medical course is relatively lower for Scheduled Castes/Scheduled Tribes (SCs/STs) and Muslims than Hindu High Castes (HHCs). The low average expenditure of medical courses confirms the low quality of education accessed by the student from underprivileged backgrounds at every level. It is important to note that education of the head of the family emerges as the most important predictor for access to medicine education. Similarly low household size also improves the probability of attendance. It is thus important to improve the access to medical

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education through establishing new educational institutions with affordable costs. The challenge is to ensure equal access for students from underprivileged groups so that the existing inequality in the availability of health professionals may be addressed. For this, affirmative action for the students from poor families and first generation learners may be worthwhile to address the problem of inequality of access to medical education. Such policies would also improve the availability of health professionals from the underprivileged socio-religious background which in turn would play an instrumental role in ensuring better access to healthcare services for patients from underprivileged communities.

Keywords

Higher education, choice, employment, inequality

Introduction

The years of school are considered as one of the most important factors that lead to improved labour market outcomes (Card, 1999). However, this approach does not take the quality of education into consideration. With improving access to education to a large section of society, the years of education can't determine the labour market outcomes effectively, rather specialisation becomes an important factor (Altonji, 2015). Studies indicate that the earning gap across colleges major is notably high (Altonji et al., 2012) and increasing (Altonji et al., 2014; Gemici & Wiswall, 2014) over time.

Despite continued expansion of higher education, the equity in access to higher education is still a major concern; it becomes highly exclusive when access to professional courses is examined (Khan, 2022). Much research focuses on overall access to higher education, while comparatively lesser research focuses on courses. The focus on medical education is completely absent so far higher education in India is concerned. The study on medical education is scant despite the fact that the availability of trained medical practitioners is significantly low and numerous students migrate outside to get a medical degree in the wake of low number of seats and high fees. The existing literature suggests a severe shortage of healthcare workers in India (Kasthuri, 2018). India is categorised among the most severe crisis-facing countries in terms of human resources in health (Karan et al., 2019). The situation is more worrisome as observed by the representation of underprivileged groups in such prestigious courses. This study investigates the broad inequities in the availability of health professionals and access to medical education recognizing that the underrepresentation of underprivileged groups is not random but systematically connects to their group identity. This study fills the gap in literature in the wake of the paucity of research focused on the postsecondary major choice. The study attempts to capture the influence of students' background, parental influences and occupational background of the family as a proxy for students' social and cultural capital, which are linked in part to their major choices in higher education (Astin, 1993; Carrico & Matusovich, 2016; Simpson, 2001).

Data and Methodology

This analysis covers three important aspects of medical education. First, it examines the labour market outcomes in relation to the medical education at aggregate level and across different groups. Second, it examines the status of medical education in India and the status of different social and religious groups. And third, the study analyses the attendance in medical education and factors affecting it.

The analysis is based on the data from three prominent datasets. The analysis of labour market outcomes examines the estimated number of workers and their distribution by gender, social and religious groups using periodic labour force survey data, 2019-20 (PLFS). The number of workers engaged in health-related industrial activities is considered as a proxy for the measure of the number of health professionals. The group of industries comprises three types of workers in health-related activities. First type (Type 1) covers workers engaged in activities of general and specialized hospitals, sanatoria, asylums, rehabilitation centres, dental centres and other health institutions that have accommodation facilities, including military bases and prison hospitals. The second type (Type 2) of workers covers those activities that can be carried out in private practice, group practices and in hospital outpatient clinics, and in clinics such as those attached to firms, schools, homes for the aged, labour organizations and fraternal organizations, as well as in patients' homes, medical practice activities and dental practice activities. The third type (Type 3) includes activities related to nurses, masseurs, physiotherapists or other para-medical practitioners, activities of independent diagnostic/pathological laboratories, activities of independent blood banks and other human health activities not elsewhere classified (including independent ambulance activities). This is to note that Type 1 activities are highly specialised in nature and are linked to institutional activities, Type 2 is largely privately operated activities while the Type 3 covers activities that assist health services. The three types of industrial groups are analysed by gender, social and religious groups and across rural and urban areas.

Another way of estimating the number of health professionals is based on the occupational status of the workers. The occupational classification of workers provides information about the health professionals engaged as physicians and surgeons in Allopathic, Ayurvedic, Homeopathic, Unani system; dental specialists; veterinarians and health professionals not elsewhere classified except nursing. This group of occupation largely covers doctors and hence may be treated as a high quality occupation.

The analysis based on the All India Survey on Higher Education (AISHE, 2019–20) examines course enrolment related to medical sciences covering all types, though paramedical sciences is excluded from the analysis.

The analysis of attendance in medical courses is based on the 75 th round national sample survey data on household social consumption: Education, 2017-18 (NSS). The variation in access to medical education by social and economic background is explored in the analysis. The course covers attendance of all types, viz., certificate, diploma, graduate, postgraduate and higher. We explore the access to medical education as a function of gender, race/ethnicity, and economically disadvantaged status. The

social and religious groups are combined to identify socio-religious groups, namely, schedule tribe (STs), schedule castes (SCs), Hindu other backward castes (HOBcs), Hindu Higher Castes (HHCs) and Muslims. Additionally, the access to private unaided institution for medical courses is also investigated. This shows inequality in access to medical courses by gender, race, and socioeconomic status (and the intersections among those demographics). The econometric analysis is based on NSS data. The analysis is confined to the age group 18–35 years. The first model analyses the access to medical education for the population in the age group 18–35 years. The second model examines the access to medical education with regard to other types of higher education, while the third model analyses the access to medical education against the access to other courses at graduate and above levels.

Health Professionals in India

The PLFS, 2019–20 data shows that there are nearly 4.8 million health workers in India. The figure is higher for male than female, 2.5 million and 2.3 million, respectively. The corresponding figure is 0.36 million among tribals, 1.1 million among SCs, 1.64 million among OBCs and 1.7 million among forward castes (HHCs). The figure widely varies across religious groups also. There are 0.30 million health care workers among Muslims, while this figure is 0.28 million for Christians, 0.12 million among Sikhs and 0.10 million among Buddhists. The health workers comprise 0.47 per cent of the total population aged 15 years & above with share being relatively higher for male than female, 0.49 per cent and 0.45 per cent, respectively. This figure is highest among HHCs at 0.59 per cent followed by 0.54 per cent among SCs, 0.38 per cent among OBCs and 0.41 per cent among tribals respectively. The figure is relatively lower among Muslims across religious groups whose 0.27 per cent population under consideration are engaged as health workers. This is relatively higher among other religious minorities (Table 1).

Table 1: Availability of health workers, 2019–20

	Number	Percentage Pop.
M	2.49	0.49
F	2.26	0.45
ST	0.36	0.41
SC	1.09	0.54
OBC	1.64	0.38
HC	1.67	0.59
Muslims	0.30	0.27
Christians	0.28	1.20
Sikhs	0.12	0.71
Buddhists	0.10	1.31
Rural	1.75	0.26
Urban	3.00	0.94
Total	4.75	0.47

Source: Periodic Labour Force Survey, 2019–20

There is very high disparity in availability of health workers between rural and urban areas. There are 1.8 million health workers in rural areas while the figure is nearly 3 million in urban areas. This is a concern as nearly 68 per cent of the population resides in rural areas while the urban areas comprise 32 per cent of the total population. This is evident from the remarkably high rural-urban disparity in terms of workers population ratio. Nearly 0.26 per cent of the 15 years & above population is engaged as health workers whereas this figure is close to four times in urban areas, 0.96 per cent (Table 1).

The majority of the health workers are engaged as regular/salaried (RS) worker, though it widely varies across different groups. Nearly 84 per cent of the total health workers are engaged as RS workers. This figure is relatively higher for female than male which is indicative of gender-based norms as women are allowed to work in secured high paying jobs. The share of Self Employed (SE) workers is almost four times higher among male than female. A similar pattern is observed among SCs/STs wherein more than 90 per cent workers are engaged as RS workers, though figures are 83.9 per cent and 78.2 per cent for OBCs and Others respectively. This probably may be due to the inclusive role of government sector as affirmative actions are available for SCs/STs in employment. However, their presence among SE workers is far lower than OBCs/HHCs reflecting the impact of identity-based patterns that are highly prevalent in the social sphere in India. Only 7 per cent and 9 per cent of STs and SCs workers are engaged as SE workers while the figures are 16 per cent and 21 per cent for OBCs and HHCs respectively. The figure for Muslims is lower in RS jobs than Hindus and other religious minorities, 76.6 per cent among Muslims as against 85 per cent among Hindus and 83.7 per cent among other religious minorities. However, the share of SE is far higher among Muslims which implies that Muslims end up mostly as self-employed health workers instead of RS works. The share of RS by types is roughly similar in rural and urban areas. The share of casual workers is negligibly low at aggregate levels and among the different groups as well. This is indicative of high quality employment in terms of job contracts and social security benefits prevalent in medical profession (Table 2).

Table 2: Health workers by type of works, 2019–20

	SE	RS	CL	Total
Male	23.7	75.9	0.41	100
Female	6.1	93.3	0.53	100
ST	6.8	93.2	0	100
SC	8.5	91.4	0.2	100
OBC	15.6	83.9	0.48	100
Others	21.1	78.2	0.73	100
Hindu	14.5	85.0	0.52	100
Muslims	22.8	76.6	0.59	100
ORM	16.3	83.7	0	100
Rural	14.9	84.7	0.39	100
Urban	15.4	84.1	0.52	100
Total	15.2	84.3	0.47	100

Source: Periodic Labour Force Survey, 2019-20

Nearly 62.1 per cent of the workers are engaged in health-related activities while 14.1 per cent are engaged in medical and dental practice and 23.8 per cent are engaged in other human health related activities. Consistent with the share of RS workers, a relatively higher share of workers among female than male and SCs/STs than OBCs/HHCs are engaged in hospital related activities. However, this is not the case for religious groups as a relatively lower percentage of Muslims than Hindus and other religious minorities are engaged in hospital activities. The other human health activities which are of relatively lower preference than hospital related activities comprises 27.3 per cent of workers among female and 20.7 per cent of workers among male. This activity comprises 26.3 per cent workers among STs and 21.6 per cent among OBCs and 27.7 per cent among HHCs. The figure is 31.6 per cent among Muslims while it is 21 per cent among Hindus and 21.6 per cent of the workers among other religious minorities. The share is roughly similar in rural and urban areas (Table 3).

Table 3: Health workers by industrial categories

	Hospital Activities	Medical & Dental Practice	Other Human Health
Male	59.7	19.6	20.7
Female	64.5	8.2	27.3
ST	62.2	11.5	26.3
SC	68.8	9.6	21.6
OBC	58.0	14.3	27.7
Others	61.6	17.4	21.0
Hindu	62.4	14.1	23.6
Muslims	52.7	15.7	31.6
ORM	65.3	13.2	21.6
Rural	60.9	15.0	24.1
Urban	62.7	13.6	23.7
Total	62.1	14.1	23.8

Source: Periodic Labour Force Survey, 2019–20

The number of health workers according to the occupational classification which shows high quality occupation is 0.848 million at all India level. The figure is higher among higher caste followed by OBCs, SCs and STs respectively according to the social groups. There are only 0.046 million health professionals as per the occupational classification among Muslims. The figure is similar for other religious minorities also. The rural-urban disaggregation shows 0.214 million and 0.634 million health professionals in these areas, respectively. The number is far higher among male than female, 0.684 million and 0.164 million, respectively. The percentage distribution also reveals that SCs/STs, OBCs and Muslims are underrepresented in terms of share. Muslims are the least represented group followed by STs and SCs respectively. Nearly, 81 per cent are male while only 19 per cent are female indicating that female are

seriously underrepresented in this occupational category. Similarly, three-fourth of health professionals are confined to urban areas while the share is 25 per cent in rural areas (Table 4).

Table 4: Health workers by occupational categories

	Total (Million)	Share (%)
Male	0.684	80.7
Female	0.164	19.3
ST	0.057	6.7
SC	0.117	13.8
OBC	0.246	29.0
Others	0.428	50.4
Muslims	0.046	5.4
ORM	0.045	5.3
Rural	0.214	25.2
Urban	0.634	74.8
Total	0.848	100

Source: Periodic Labour Force Survey, 2019–20

Access to Medical Courses

So far the access to medical courses is concerned, the enrolment is close to 19.8 lakh in medical sciences and 28,400 in paramedical courses. In terms of gender wise composition, female constitutes 61 per cent of the total enrolment in medical sciences while the corresponding figure for male is 39 per cent. This shows that medical sciences is highly female-oriented. However, the female-centric enrolment is confined significantly to the lower level of education in medical sciences (Fig 1).

Table 5 shows the share of medical courses in total attendance/enrolment in higher education at aggregate level 2.5 per cent of the total attendance takes place in medical courses. The figure is lower for SCs/STs but it is slightly higher than the overall average for Muslims. This course comprises nearly 2 per cent of the total attendance among SCs/STs while this figure is 3 per cent among Muslims. The AISHE data shows a higher share of medicine in total enrolment. It comprises nearly 6 per cent of the total enrolment while the corresponding share is 5 per cent among SCs/STs and 5.6 per cent among Muslims.

Table 5: Share of medicine in total attendance/enrolment

	ST	SC	Muslim	Total
NSS, 2017–18	1.6	2.2	3.1	2.5
AISHE, 2019–20	5.0	5.0	5.6	5.5

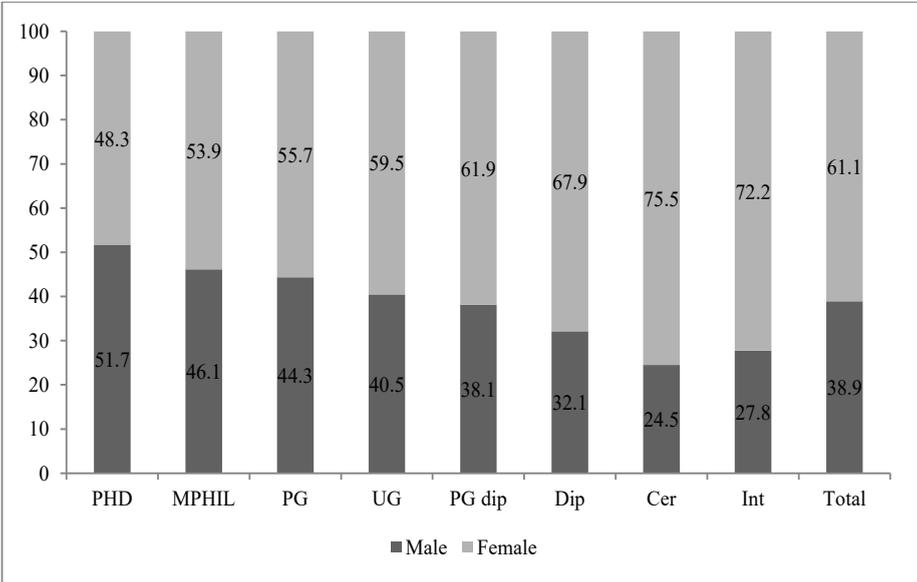


Fig 1. Gender-wise share in enrolment in medical science by level of education

The share of females in enrolment at a certificate level is nearly 76 per cent but it continues to reduce as one moves up to higher levels of education and reduces to 48 per cent at Ph.D. levels. The high share of enrolment of women at lower levels of education indicates that a large number of women join the medical sciences to earn a livelihood which is consistent with the social norm imposed upon them.

The majority of students are enrolled at undergraduate level. The figure is relatively lower among SCs and STs while it is higher among Muslims. At aggregate levels, nearly 66 per cent of students study at undergraduate levels. This share is 72 per cent among Muslims, 57 per cent among SCs and 54 per cent among STs. The share of diploma is higher among STs and SCs than the aggregate level. It is relatively lower among Muslims. The share of PG is also relatively lower among SCs/STs though it is higher among Muslims. The share is lower than aggregate level among Muslims also. Similarly the share of PHD is lower than aggregate level among all the three underrepresented minorities but it is relatively higher among Muslims followed by SC and ST respectively.

In order to compare the performance of different groups enrolment per thousand population in 18 to 23 years population is used as an indicator. The enrolment in medical sciences is only 13.0 per thousand of the total population in the age group 18–23 years. This share is 10.3 for male and 18.0 for female. The figure is lower among STs and SCs at 7.5 and 7.9 respectively while it is lowest at 5.5 for Muslims. The gap vis-à-vis aggregate levels is high for undergraduate courses wherein only 4 per thousand students are enrolled in medical courses for underprivileged groups while the corresponding figure is 8.5 at aggregate level. Thus, the representation of underprivileged groups is very low in medical courses (Fig. 2).

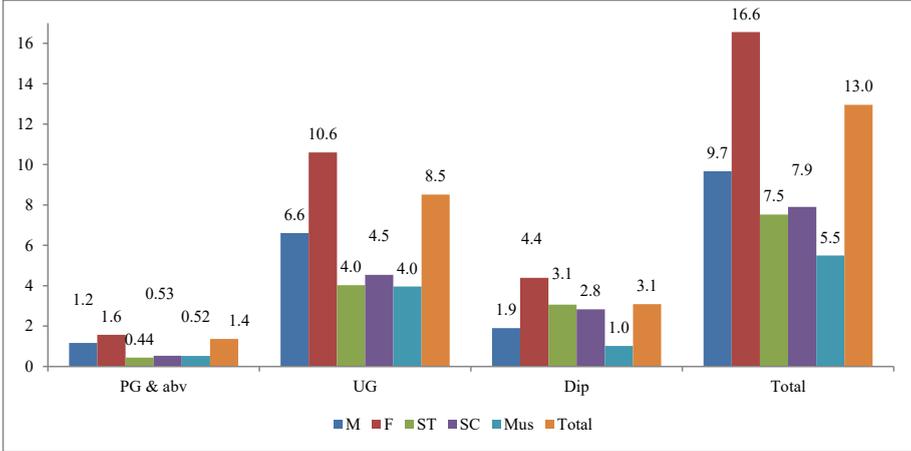


Fig 2. Share of enrolment per thousand population (18-23 years) by level of education

The distribution of enrolment by level of education reveals that while a relatively higher number of SCs/STs students are enrolled at diploma levels, their share at graduate and higher levels is low. However, the share of undergraduate level for Muslims is higher than overall average. Notably, the share is higher for SCs/STs in diploma courses than Muslims which leads to high gap at aggregate level. The low access to medical courses is a common problem for all the underprivileged groups. However, the low representation at higher level is specific to SCs/STs only (Table 6). The pattern among the three underprivileged groups shows that medical education for Muslims probably confines to their economically well-off section while weaker sections among SCs/STs join short-duration medical courses to earn livelihood. Consequently, the share of higher level of education is relatively better among Muslims than SCs/STs despite lower number of enrolment per thousand 18-23 aged population among them.

Table 6: Access to medical courses by level of education, 2017-18

	ST	SC	MUS	TOT
PH.D	0.08	0.16	0.26	0.46
M.PHIL	0.01	0.00	0.02	0.04
PG	5.8	6.6	9.1	10.0
UG	53.5	57.4	72.1	65.7
PGD	0.26	0.21	0.23	0.31
DIP	39.5	35.0	17.9	23.1
CERT	0.86	0.65	0.17	0.39
INT	0.00	0.01	0.17	0.03
Total	100	100	100	100

Source: All India Survey of Higher Education, 2019-20

Privatization and Household Expenditure on Medical Education

As per the AISHE, 2019-20 data, more than half of the total enrolment in medicine takes place in self-financed courses. It comprises nearly 55 per cent of the total

enrolment in medicine. The share is slightly lower among SCs and STs whose 52 per cent and 48 per cent of the total enrolment respectively takes place in self-financed courses. A relatively higher share of Muslim students are enrolled in self-financed courses, 59 per cent.

Table 7: Share of self-financed courses in total enrolment in medicine

	Self-Financed	Share in Total Enrolment in Medicine (%)
ST	49275	48.0
SC	135038	51.5
Muslims	65267	58.8
Total	1097468	55.4

Source: All India Survey of Higher Education, 2019–20

The share of unaided institutions is higher at lower levels of education, i.e. the private sector is highly concentrated in short term courses. As one moves upward in terms of level of education, the share of unaided institutions continues to reduce. Nearly 75 per cent of the total attendance at higher secondary levels takes place in private unaided institutions. For diplomas, this figure is 18 per cent at secondary level and 48 per cent at HS level and 35 per cent at graduate & above levels. However, unaided institutions comprise 44 per cent of the total attendance at graduate level. The corresponding figure is nearly 29 per cent at Post Graduate & higher levels.

Table 8: Attendance in medicine course by type of institution & level of education

Level	Gov.	Aided	Unaided	NK	Total
Secondary	98.3	1.7	0	0	100
HS	22.5	2.7	74.8	0	100
Diploma secondary	71.6	10.7	17.7	0	100
Diploma HS	27.0	22.7	47.9	2.34	100
Diploma grad & above	43.7	20.7	35.1	0.46	100
Graduate	35.5	21.0	43.5	0	100
PG & above	44.9	26.3	28.5	0.35	100
Total	38.0	20.6	40.9	0.57	100

Source: 75th Round National Sample Survey, 2017–18

The share of attendance by types of institutions also indicates higher dependence of underprivileged groups on unaided institutions. The private unaided institutions constitute nearly 41 per cent of the total attendance at aggregate level. However, this share is only 28 per cent among HHCs. The corresponding shares are 62 per cent and 52 per cent among STs and SCs respectively. The high share of private unaided institutions among SCs/STs might be possible due to a high share of diploma courses among them. The share is 44.5 per cent among HOBCs and 37 per cent among Muslims. This is to note that the higher share of SCs/STs in unaided institutions coexisting

with a lower share in self-financing courses might reflect their lower representation in self-financed courses in government and aided institutions. The management-wise distribution of enrolment misses out on the self-financed courses in government and aided institutions where it is highly likely that students from privileged backgrounds might be concentrated. The high share of unaided institutions among Muslims again confirms the hypothesis of medical education being confined to a minuscule economically well-off section among them. The minority institutions might also be playing an instrumental role in the provision of medical education to a small section of the community. However, the community as a whole is lagging in terms overall access to medical education behind all the other social and religious groups.

Table 9: Attendance in medicine course by type of institution

	ST	SC	HOBC	HHC	Muslim	Rest	Total
Government	19.5	21.3	35.3	47.7	53.1	12.9	38.0
Aided	18.0	26.5	20.2	22.3	10.2	25.8	20.6
Unaided	62.3	52.0	44.5	28.4	36.7	61.1	40.9
NK	0.19	0.27	0	1.56	0.1	0.26	0.57
Total	100	100	100	100	100	100	100

Source: 75th Round National Sample Survey, 2017–18

The expenditure incurred on medical courses in an academic year is shown by types of institutions and socio-religious groups (Table 10). Nearly ₹ 57,000 is spent by a household in an academic year. The expenditure incurred by the underprivileged groups is lower than those belonging to the well-off groups. The figure is highest for HHCs followed by HOBCs, Muslims, SCs and STs respectively.

The average expenditure by type of institutions reveals a huge difference between government and private institutions. Interestingly, the expenditure is highest in private aided institutions followed by unaided and government institutions. The expenditure is nearly ₹ 20,000 in government institutions while it is ₹ 83,900 in private aided institutions and ₹ 78,300 in private unaided institutions. This is to note that higher average expenditure in aided institutions than unaided institutions is attributed to the higher average expenditure among the underprivileged groups, namely, SCs/STs/HOBCs. The average expenditure in private unaided institutions is ₹ 1.14 lakh for HHCs which is highest among every socio-religious group. This figure is ₹ 77.8 thousand for HOBCs while it is ₹ 37.4 thousand for STs and ₹ 41.8 thousand for SCs. The average expenditure among Muslims is also relatively higher than the other underprivileged groups but lower than HHCs. It is ₹ 79.9 thousand among Muslims. A similar pattern is observed in private aided and government institutions wherein the average expenditure is higher for HHCs/HOBCs than STs/SCs. The expenditure is lowest for government institutions. In government institutions, the figure is lower for Muslims than HOBCs/HHCs. It is a matter of further inquiry whether low expenditure

of Muslims is attributed to their participation in low cost short duration courses or in government supported courses in minority institutions.

Table 11 shows the expenditure by level of education. The average expenditure is higher at higher levels of education among every group. This is to note that the average expenditure is higher for HHCs/HOBCs at every level except PG & higher level wherein Muslims have the highest expenditure. The expenditure at PG & higher level is highest among Muslims followed by SCs, HOBCs, HHCs and STs respectively. This pattern changes at the graduate level. The figure is highest for HHCs followed by HOBCs, Muslims, SCs and STs at graduate levels respectively. The fact that the average expenditure is lower for the underprivileged group for a particular level of education reflects low quality of medical education among them. The relatively higher expenditure among Muslims and SCs at PG & higher level demands further inquiry.

Table 10: Expenditure in medicine course by type of institution (In academic year)

Groups	Government	Aided	Unaided	NK	Total
ST	16967	39811	37398	42663	33864
SC	13077	53698	41830	24999	38804
HOBC	24276	84165	77776	-	60174
HHC	20946	112672	114058	34521	68085
Muslim	9768	62411	79900	25039	40846
Rest	53913	54607	93541	73164	78339
Total	19699	83900	78290	34596	56936

Source: 75th Round National Sample Survey, 2017–18

Table 11: Expenditure on medicine course by level of education (In academic year)

Level	ST	SC	HOBC	HHC	Muslim	Rest	Total
Diploma secondary	13459	14563	5878	20119	6626	61495	8837
Diploma HS	21265	25079	34137	37142	15195	35647	28519
Diploma grad & above	43589	26523	42769	33508	23532	53498	34604
Graduate	46968	57955	82288	85827	74801	111947	80813
PG & above	17642	125255	91569	79456	147742	61271	94610
Total	33864	38804	60174	68085	40846	78339	56936

Source: 75th Round National Sample Survey, 2017–18

Econometric Exercise

The econometric analysis is based on the three models as shown in Table 12. The table shows the odd ratio for the three models.

Model 1: Attending courses related to medicine vs. not attending. This model is used for examining the factor affecting access to medical education in the age group between 18 and 35 years.

Model 2: Attending courses related to medicine vs. other course in higher education.

This model is used for those attending higher education in the age group between 18 and 35 years.

Model 3: Attending Post Graduate & high level in course related to medicine vs.

lower level of medical courses. This model is used for those having graduate and above level in the age group between 18 and 35 years.

The independent variables used are socio-religious groups, gender, education of the head of the households and size of the household. For social groups, STs, SCs, HOBCs, HHCs, Muslims and rest are considered. The education of the head is a binary variable comprising those having level of education upto primary/middle against higher level of education. Gender is a binary variable comprising male and female. Size of the households is a continuous variable.

Table 12: Result of the logistic model

	Access	Choice	Level
ST	0.384	0.554	0.497
SC	0.644	0.780	0.787
HOBC	0.627	0.790	0.903
Muslim	0.963	1.061	0.865
Rest	1.363	0.806	0.897
Head's education	4.575	2.277	2.827
Female	1.687	2.385	2.528
Household size	0.659	0.680	0.570
_cons	0.007	0.047	0.051
Observation	1,36,372	23,237	19,252
Pseudo R2	0.1022	0.0984	0.1577

Source: Based on 75th round National Sample Survey data, 2017–18

Note: All coefficients are statistically significant

In model 1, the odds for attending medical courses is 62 per cent lower among STs than HHCs while this gap is 36 per cent for SCs and 37 per cent for HOBCs. The odds for Muslims is 4 per cent higher than HHCs. The education of the head of the family significantly improves the probability of access to medical courses. Similarly, the odds for attending medical courses is higher among female than male. The higher the size of the household the lower are the chances of attending medical courses which is understandable as larger households may have lower capacity to finance expensive medical courses than smaller households.

Model 2 also shows the similar result with a few differences. The odds for attending medical course is lower by 45 per cent among STs, 21 per cent lower for SCs, 10 per cent lower among HOBCs than HHCs. The odds is 13 per cent higher for Muslims than HHCs. The odds for attending higher education is higher for female

than male in this model also. The education of the head of the household continues to affect the attendance in medical courses positively. However, the higher household size reduces the chance of joining medical courses.

Model 3 shows that the odds for attending higher education is lower by 50 per cent for STs, 21 per cent for SCs, 10 per cent for HOBCs and 13 per cent for Muslims than HHC. The odds for female continues to be higher than male. The role of household size and head's education also remains the same.

Thus, the education of the head of the household remains the most prominent factor affecting access to medical education in all three models. The lower household size also improves the access to this course. The probability of attendance for female remains consistently higher than male in all the three models. The access of underprivileged caste and religious groups is lower than HHCs in all the models. However, the probability of attendance of medical courses vis-à-vis other courses in higher education for Muslims is higher than HHCs.

Conclusion

This study examines the access of students from diverse background to medical education in India. It shows that inequalities existing in society may entail significant social injustices with regard to the access to a career in medicine.

It is observed that the availability of health professionals is very low overall but is even lower among underprivileged groups. If one considers the share of high quality occupation by different groups, the inequality becomes stark and remarkably high. There are indications of relatively better concentration of regular jobs among health professionals belonging to the underprivileged social groups probably due to the presence of affirmative action. However, the concentration of self-employed health professionals is relatively higher among Muslims. This pattern reflects the impact of caste/ethnicity-based prejudice in the social sphere leading to the lower concentration of caste/ethnic groups in self-employment on the one hand and high concentration of self-employment among Muslims due to segregation and the absence of affirmative action in employment for Muslim minorities on the other hand.

One may note that the inequality is high in access to medical education which also indicates that the prevailing inequality among health professionals is linked to the existing inequality in higher education. The analysis further shows that the access to medical education is linked to the family background as depicted by caste and religious backgrounds. The access of underprivileged caste/ethnic groups, namely, SCs/STs is lower than HHCs. Similarly, the access of Muslims is lower than the HHCs. Apart from identity, the existing inequality is related to economic background as well. The household size and education of the head of the family is used as a proxy to capture the impact of family background on access to medicine courses.

The share of unaided institutions and self-finance courses is notably high in medical education. More than half of the total enrolment in medicine takes place in self-financed courses, while 41 per cent of the total enrolment in medicine takes place in private unaided institutions. The concentration of unaided institutions is higher at lower levels of education. The concentration of unaided institution is high among SCs/STs also probably due to the high share of short-term courses among them. This is also evident from the low expenditure on medical courses among SCs/STs in every type of institution. The high share of unaided institutions among Muslims again confirms the hypothesis of medical education being confined to a minuscule economically well-off section among them. The minority institutions might also be playing an instrumental role in the provision of medical education to a small section of the community. However, the community as a whole is lagging in terms overall access to medical education behind all the other social and religious groups.

The average expenditure among the underprivileged groups is also lower than HHCs. The average expenditure is higher at higher levels of education among every group. The fact that the average expenditure is lower for the underprivileged group for a particular level of education reflects low quality of medical education among them.

The econometric analysis shows that head's education remains the most prominent factor affecting access to medicine courses in all three models. A lower household size also improves access to this course. The access of females remains consistently higher than males in all the three models which might be due to gender-based norms in higher education as medicine is considered a suitable profession for women. The access of underprivileged caste and religious group is lower than HHC in all the models. However, the probability of attendance of medicine courses vis-à-vis other courses in higher education for Muslims is higher than HHC.

Thus, the challenge is ensuring equal access for students from underprivileged groups so that the existing inequality in the availability of health professionals may be addressed. For this, affirmative action for students from poor families and first generation learners may be worthwhile to address the problem of inequality of access to medicine courses. Such policies would also improve the availability of health professionals from varied socio-religious backgrounds which would play an instrumental role in ensuring better access to healthcare services for patients from underprivileged communities.

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