

Costing of Medical Education in Kerala, India

Dr Syam Prasad¹, Vipitha V²

¹Assistant Professor, Central University of Kerala, India

²Mphil Scholar, CDS, Trivandrum, India

*Corresponding Author:

Dr Syam Prasad

Email: prasadnatural@gmail.com

Abstract: Higher education falls outside the ambit of merit category since the personal benefit from higher education exceeds the social benefit. In this milieu, the heavy spending on higher education by the government led to some structural changes withdrawing the huge subsidy elements and allowing the entry of private providers in higher education. However there are fairly large amount of subsidy on higher education even at present. The rationality of subsidy as well as fee can be found out only in terms of the cost incurred for providing the education and comparing it with fee collected from the student. The paper is an attempt to find out the unit cost of providing medical education particularly the MBBS course in Kerala and the rationality of the fee charged by the government and self financing institutions. The study found that there is a mark-up profit for the self financing institutions and at the same time government has a heavy spending burden.

Keywords: Merit good, higher education, self financing education.

INTRODUCTION

Education is widely regarded as an economic good. It plays its most important role both as a consumer good and as a capital good in the economy. This is mainly because of the fact that it provides utility to the consumer as a consumer good and also serves as an input for the production of other goods and services. Education is also treated as a merit good [1]. It is a merit good because consumption of which is to be promoted. But education beyond certain level is a non-merit good. The elementary education is generally considered as a merit good. Education beyond the elementary level falls outside the ambit of merit category [2]. Merit goods are the products provided by both the private market and the government. That is, if education as a merit good is provided privately, it will be affordable to the rich only. The elementary education generates positive externalities where the social benefit from the consumption of elementary education as a merit good exceeds the private benefit. As they carry external benefits, the government thinks that everybody should have them. So in this regard, the developing countries started investing in general education that there will be an under consumption of elementary education as a merit good. So government willingly subsidizes it in such a way that consumption does not primarily depend on the ability to pay. That is, the social rate of return in investment in primary and secondary education usually exceed the rates of return on higher education and because investment in basic education can improve equity because it tends to reduce inequalities [3].

Higher education is the zenith of educational voyage of a student. It falls outside the ambit of merit category. This is mainly because the utility of consuming higher education as a non-merit good provides more benefits to the individual than to the society as a whole. Higher education like other levels of education yields higher rates of return to the individuals than to the society at large as after all huge public subsidies make higher education more attractive to individual [4]. The benefits that can be achieved from higher education cannot be predicted by the individual during the time of spending. Since the returns will be higher and social benefits less, when compared to the elementary education, it seems to be in the non-merit category. However government heavily subsidizes higher education. So higher education acquires the characteristics of a private good and thereby creates a scope for increasing the user charges in higher education and a reduction of subsidy rate for non-merit good.

Higher education being the non-merit good has gone through drastic reforms in different periods. Giving stress on the Keynesian argument of the role of the state, governments all over the world gave priority to the heavy subsidization of higher education which has lasted until 1970's. The subsequent financial stringency followed by heavy spending by the government led to a rethinking on the part of authorities and led to the Washington consensus and agenda of reforms. Since higher education is not price elastic and the cost recovery methods will not lead to the fall in

higher education enrolment, the government slowly withdrawn from the sphere. This has gradually led to the marketisation of higher education through the establishment of various self financing private institutions. These market promoting policies everywhere poses serious challenges especially through the deteriorating quality and irrational cost recovery measures.

The reforms in higher education led to the changes in educational policy both in the developed and developing economies. This has led to the policy revision in India also. The Indian educational network is the second largest in the world. The Indian higher education sector in India seems to be highly systematized in a well manner. It earlier seemed to be state funded sector. The Government of India [2] identified a large number of economic and social services as public good, merit good and non-merit good [5]. It has also been decided to reduce subsidies to non merit goods. So, due to the resource constraints and the burden of government in providing education has led to reforms in education thereby considering the growing demand for higher education and the pressure on enrollment growth. In the absence of increased funding or budgetary allocation, the public infrastructure could not keep pace with the increased demand [6]. In this background, with a stress on liberalization, privatization and globalization, the higher education sector has opened for privatization. This has led to the mushroom growth of the self financing institutions all over the country. The bulk of investment made by the private sector was mainly in professional courses like engineering, medicine, law and management.

KERALA AND HIGHER EDUCATION SCENARIO

Kerala's achievements in developments and education are well known. It is well ahead in education compared to other Indian states. In the initial stages of development, the government of Kerala gave importance to the primary education alone. But in the later stages, it has gained importance. The reforms in the global arena brought some visible changes in the higher education scenario of Kerala. This can be seen in the number of universities, colleges, other aided and unaided institutions etc. There were also sudden changes in the professional and technical education in the state. The establishment of Kerala State Higher Education Council was a part of reforming the higher education system in Kerala. Currently 10 universities are functioning in the state. The University of Kerala, the University of Calicut, The Mahatma Gandhi University and Kannur University are offering various courses. The Sree Sankaracharya University of Sanskrit, Cochin University of Science and Technology and Kerala Agricultural University, are offering specialized courses in specified subjects. Besides these, The National university of Advanced Studies (NUALS) established in 2005, the Central University established

in 2009 in Kasargod and Aligarh Muslim University established in 2010 are also functioning in the state.

Among the other higher education courses, the professional type education is the mostly demanded stream in Kerala. The main professional courses provided by various colleges include Medical Courses, Engineering Courses, Agriculture and Allied Courses, Veterinary Course, MCA Course and Law. In the field of professional education there is a dominance of the private sector. The number of private institutions in Kerala offering various professional courses together is higher than that of the government and government aided institutions. Among the various professional educational institutions, the engineering colleges dominate the higher education scenario of Kerala. The number of engineering colleges in Kerala is 153, which is followed by the management course of MCA and medical course of MBBS. This locates the most important problem of high cost higher education in Kerala as there exists a wide dispersion in the number of private and governmental educational institutions providing professional education.

MEDICAL EDUCATION IN KERALA

Among the various professional courses the medical education is the most demanded stream in Kerala. The medical education in Kerala can be classified into two— the modern (western) system of medicine i.e. Allopathic, or Non-Indian System of Medicine (NISM) and Indian Systems of Medicine and Homeopathy (ISMH) that includes Ayurveda, Unani, Siddha and Homeopathy. Modern (NISM) medical training for doctors is provided at the undergraduate and post-graduate level. There are five Medical colleges working in the public sector. They are T.D Medical college Alappuzha, Government medical college, Thiruvananthapuram, Government medical college Kozhikode, Government medical college Kottayam and government medical college Thrissur. The government medical colleges together provide 900 MBBS seats. Admissions to government medical colleges in Kerala are conducted on the basis of a merit list, or entrance examinations. Besides these, there are two government controlled medical colleges functioning in the state. They are- Co-operative Medical College, Ernakulam and Academy of Medical Sciences, Pariyaram, Kannur. These two colleges provide a total of 200 MBBS seats in Kerala. These colleges are subjected to the Government control. They provide subsidized medical seats along with management quota.

After the reforms in higher education and also considering the enrolment pressure, more medical colleges were allowed in the private sector. Though they are autonomous institutions, they are regulated controlled by the Medical Council of India. This phenomenal growth of the self financing institutions led to what is called heterogeneity in the provision of medical education. Medical education provides higher

rate of return in future than the general education which led to the maddening rush for admission into the medical colleges [4]. Since there is a demand pull along with the withdrawal of the state from the higher education, there is a steep rise in price to be paid by the students. The private institutions have been established with the aim of extracting the full recovery of cost from those who derive the benefits of education. Thus the core of crisis in higher education stems from the cost recovery of self financing institutions which are squeezing the wealth of the aspirant. This requires an urgent need for estimating the cost of providing the education in order to fix the price which is adequate to cover the cost. This becomes a serious issue as it poses an entry barrier to the medical education thereby making it elitist [8]. Considering the financial barriers to the entry to the professional courses, there is a need for estimating the fees which bears a fair resemblance to the cost occurred.

Since professional education especially, medical education yields higher level of returns in the future, there is a tendency to charge a fee which is even much higher than the cost required for providing the education. The attempts which were made to fix the cost recovery mechanisms through various committees were unfruitful. The Admission Supervisory Committee for the professional courses headed by Justice P.A. Muhammad was a land mark in this regard. Even though the committee revised the fee structure, there is confusion about the mechanism. The determination of fee for the private management was by disregarding the supply side of costing. It was a blind adoption of the fee structure thereby leading to the inefficient cost recovery. By locating these loopholes in the cost recovery mechanism, it can be fairly said that a true pricing mechanism is the one that bears close resemblance to the cost of adequately providing them.

At the same time, there is a scope for the rethinking the fact that whether the government is in a position to charge a user fee than today and whether it can reduce the existing subsidy. In this scenario, the major questions arise are;

- What is the cost incurred for providing a particular type of education?
- Whether the existing system of cost recovery of education is adequate?

In connection with these specific questions, the medical field of education, especially the course of MBBS is being considered here. That is, annual cost of providing the MBBS course per student by analyzing the supply side of medical education with a scrutiny of existing annual fees in the self financing colleges to check whether it is rational from the point of view of the students.

How it is done?

The analysis is done by estimating the cost of providing medical education in Kerala from the study of Government Medical College, Thiruvananthapuram and the per unit cost incurred by the institution for a student in M.B.B.S course. The rationality of the self financing institutions in the cost recovery mechanisms is inspected by comparing the cost of providing the MBBS course in Thiruvananthapuram Medical College and the fee which is existing in the government medical college and Academy of Medical Sciences, Paryayram. The study is based on secondary data. Primarily the study depends on the Annual Audited statement of the Government Medical College, Thiruvananthapuram for the year 2011-12 submitted to the Comptroller and Auditor General (CAG). The Costing is done on the basis of the Medical Council of India Report by the expert committee on Medical education published in 2004. Along with this, the information collected from the Commissioner of the entrance exam is used in this study.

COSTING OF MBBS COURSE IN GOVERNMENT MEDICAL COLLEGE, THIRUVANANTHAPURAM

The government medical college, Thiruvananthapuram is the first medical college established in Kerala. In total, 14 courses are offered by the Thiruvananthapuram medical college. The seats available for the course of MBBS are 200 which are the largest among them. The cost element of the course of MBBS has two categories-the direct cost and indirect cost. The direct cost comprises of the Salary and Allowances to the teachers and the running cost of MBBS course. The indirect cost is the expenditure incurred by the institution for running the hospital. It is inevitable to take into account the hospital running cost because the different streams of medical education can be provided only through a hospital. According to the Medical Council of India, in order to start a medical college for providing various courses, it should fulfill its obligations and certain conditions as a hospital. From this point of view, the total cost of providing the MBBS course is the sum total of the hospital running cost, salary of teachers and the running cost of MBBS course.

The Medical Council of India provides certain guidelines to be followed in order to start a medical college regarding the bed strengths and other hospital facilities. If the conditions related to the infrastructural facilities of the hospital are satisfied, the Medical College can be run. Therefore, the hospital running cost also forms part of the cost of medical education. According to the Medical Council of India Report [9], 32percent of the cost of the hospital will be for providing the course of MBBS. So, firstly the aggregate expenditure of the institution is to be calculated and from that the cost of providing the course of MBBS (32% of the total cost) is calculated. The total cost of

running the hospital is also a component of the cost of providing the medical course of MBBS. The table 1

shows the aggregate expenditure incurred by the institution for the hospital.

Table 1: Aggregate expenditure incurred by the institution for the hospital in TMH

Components	2010-11 in thousand rupees	2011-12 in thousand rupees
1.salary		
DA+pay	108664	207548
HRA	80412	64340
other allowances	201209	284998
Total salary	390285	556886
2.TA	765	1016
3.Transfer allowances	115	115
4.other TA	265	265
5.Office expenditure	93000	93000
6.Minor works	300	300
7.Machinery and 8.equipment	2000	3000
8.Vehicles	56	56
9.Materials and supplies	11000	12100
10.POL	144	144
Total(1+2+3+4+5+6+7+8+9+10)	888215	1223768

Source: Expenditure statement submitted to CAG, 2011-12

The table shows the different items of expenditure of the Thiruvananthapuram Medical College for the two financial years-2010-11 and 2011-12 where the expenditure is given in thousand rupees. The total expenditure incurred by the institution was RS.888215000 in 2010-11.It increased to RS.1223768 in 2011-12 financial year. There was an adding up of Rs.335553000 in the year 2011-12 compared to the previous financial year. For the analysis the financial year 2011-12 alone is taken into account.

In the financial year,2011-12,the total hospital running cost is RS.1223768000.According to the Medical council of India Report, 32 per cent of the of Rs.1223768000 is for the MBBS course. That is, an amount of Rs.391605760 is spent for providing the course of MBBS. This figure includes the salary of teachers also.

Second component is the salary of teachers. Medical Council of India Report [9] finds that 60 per cent of the salary component of the institution is for the course of MBBS. So the salary component and other

allowances and benefits provided to the teachers is a major item of expenditure for providing the medical education, especially the course of MBBS. The salary details of the teachers of MBBS are given in the table 2.

The total salary of the teachers was Rs.187337000 in the financial year 2010-11, Which has increased to RS.267305000 in 2011-12.That is there is an increase of RS.79968000.Besides the component of salary, the items like travel and transfer allowances and other TA together accounts for RS.188018000 and Rs.268248000 respectively in 2011-11 and 2011-12 respectively for maintaining the teachers for the institution. For the analysis the financial year 2011-12 is taken. That is an amount of Rs 268248000 is paid as the salary of teachers. This is an aggregate amount of salary that is paid to the faculties for teaching various courses. As per the Report of MCI, 60 per cent of Rs.268248000 is the salary of the teachers in the course of MBBS. That is, Rs.160948800 is the salary for MBBS teachers.

Table 2: salary details of MBBS teachers

Components	2010-11(in thousands)	2011-12(in thousands)
1.salary		
DA+Pay	52159	99623
HR	38598	30883
other allowances	96580	136799
Total	187337	267305
2.TA	415	658
3.Transfer allowances	78	90
4.other TA	188	195
Total(1+2+3+4)	188018	268248

Source: Expenditure statement submitted to CAG,2011-12

Thirdly, there is a running cost of MBBS course. This components account for various expenditures incurred by the institution for conducting examination, providing lab facilities, scholarships,

maintaining the classes, hostel, arts and sports, field studies etc. The table 3 shows the various expenditures incurred by the institution particularly for the course of MBBS.

Table 3 : Various expenditures on the course of MBBS

Expenditure Head	2010-11(in thousands)	2011-12(in thousands)
Examination cost	1052	1068
Lab cost	22500	28652
Maintenance of class	1012	985
Scholarships/allowances	2585	2650
Hostel maintenance	20560	21320
Expenditure on Student welfare	865	1025
Art and Sports	5625	6202
Field studies	6852	6525
other cost	1023	1055
Total	62074	69482

Source: Expenditure statement submitted to CAG,2011-12

In the year 2010-11, the total cost incurred by the institution for running the MBBS course excluding the salaries and hospital running cost was RS.62074000. It has increased to Rs.69482000 in the year 2011-12. So, The MBBS running cost is Rs.69482000. Thus, the total cost of providing the course of MBBS is the sum total of teacher's salary, the running cost of the MBBS course and the hospital cost of providing the course. That is,

The hospital cost for providing MBBS (including salary) =Rs.391605760

The salary of the teachers in MBBS stream=Rs.160948800

The running cost of the MBBS course= Rs.69482000

Since the hospital cost includes the salary of the teacher's also, it results in double counting. So the salary of the teachers has to be reduced from the total hospital cost for providing the MBBS course. Therefore, the hospital cost for providing the course Rs.230656960. So, the total cost incurred by the institution for providing the MBBS Course Rs.461087760.

Given the aggregate expenditure for providing the MBBS course in the Government Medical College Thiruvananthapuram, the per capita expenditure for an MBBS student can be calculated. In Government Medical College Thiruvananthapuram, the annual intake for MBBS course is 200. The course comprises of four years of study and one and a half years of intern period. So for five years, 1000 MBBS students are there. So the per capita expenditure incurred by the institution for a MBBS student in a year is given by Rs4, 61,088.

As per the Medical council of India norms, this cost of providing the MBBS course in Thiruvananthapuram medical college can be generalized to some extent. To answer the rationality question a comparison is required between the fees charged in the self financing colleges and the cost in actual sense spent by the institution as the process of pricing is purely on the cost basis. For this comparison the Academy of Medical Sciences, Paryaram has been taken as a proxy for the self financing colleges.

COMPARISON OF COST WITH EXISTING FEE STRUCTURE OF ACADEMY OF MEDICAL SCIENCES, PARIYARAM

The Academy of Medical Sciences, Pariyaram is one of the two Government aided Medical colleges in Kerala. The institution offers 100 MBBS seat. Being a non-governmental institution, mainly three types of seats are offered there-merit, management and NRI seats. Out of the total seats, 50 percent is filled with merit, and 25 percent each is management and NRI seats. Since the cost is estimated on an annual basis, comparison should be with the average annual fee. So the weighted average should be calculated keeping in view the three types of seats. The annual weighted average fee is the sum total of these three weights. The above table shows the fees structure for the students admitted in the management seat merit seat and NRI seats for the academic year 2012-13. The fees are payable for the consecutive four years excluding the period of internship. The student who is admitted on a merit basis has to pay a sum total of Rs 7, 92,960 as the fee for the MBBS course. The management and NRI seats have a total fee of Rs 24, 37,360 and Rs 41, 96,160 respectively. From this the fee per year has to be calculated as the expenditure is calculated on an annual basis. So we have the annual merit fee as 1, 98,240. Similarly the fee for management and NRI seats are 6,

09340 and 10, 49,040 respectively. Considering the three types of seats, the weighted average of these fees

is calculated. The average annual fee in the academy of Medical Sciences, Paryayram is, therefore Rs.5, 13,715.

Table 5: The fee structure of the self-financing college (Pariyaram Medical college)

		Management	NRI	Merit	
Tuition fee		550000	100000	150000	Yearly
Special fees	admission fee	1000	1000	1000	
	Establishment	10000	10000	10000	Yearly
	library fee and internet	4000	4000	4000	Yearly
	van fee	4000	4000	4000	Yearly
	Total	19000	19000	19000	
Miscellaneous fees	miscellaneous fee	1500	1500	1500	Yearly
	university fee	5000	5000	5000	
	University exam fee	3000	3000	3000	Yearly
	College union fee	1000	1000	1000	
	Students cooperative society	110	110	110	
	Curriculum, calendar	250	250	250	
	Sports fees	1000	1000	1000	Yearly
Total	11860	11860	11860		
Hostel fee	Hostel caution deposit	10000	10000	10000	
	Hostel rent	15000	15000	15000	Yearly
	Academic caution	10000	10000	10000	
	Mess advance	3000	3000	3000	
	Total	38000	38000	38000	
PTA	PTA admission fee	3000	3000	3000	
	PTA fee	500	500	500	Yearly
	Total	3500	3500	3500	
	Insurance	4800	6800	3600	
	Total	4800	6800	3600	
Grand total		627160	1079160	225960	

Source: academy of medical sciences, Pariyaram,2012-13

The total cost incurred for providing MBBS education per student in a year in Thiruvananthapuram Medical College is Rs.461088. But the fee collected by the institution is only Rs.24, 612.5. Since it is a Government institution, the education is highly subsidized by the Government under the welfare considerations. The difference between the per student cost incurred by the institution annually and the annual fee collected is Rs.4, 36,475.5. This huge amount is the government subsidy. The government subsidizes the medical education in such a manner that consumption does not primarily depend on the ability to pay. The analysis above also shows some possibility and prospects of increasing the fees of the MBBS course in the Government medical colleges considering the huge spending from the part of the government.

WHETHER TO RAISE FEE IN THE SELF FINANCING COLLEGES?

The burning question, whether there is a need to increase the fee in the self financing medical colleges, has to be treated in a practical manner. It needs the estimation of cost of providing various streams of medical education. Then only the fee can be fairly estimated. The total cost in Government medical college, Thiruvananthapuram for providing the course of MBBS per student is Rs. 461087760 for the year

2011-12. The comparison of the total course fee of the Government Medical colleges and the self-financing medical colleges shows the massive subsidy that is given by the government for providing the medical course of MBBS. Since there are three types of seats in the self-financing colleges a weighted average of the merit, management and NRI seats are calculated. The average annual fee in the self-financing college is Rs.5, 13,715. Comparing the annual fee of Paryaram Medical College with the estimated cost shows that the fee is somehow higher than the cost. That is, there is a mark-up profit of Rs. 52627. So it can be fairly said that the existing fee structure in the self-financing colleges including the Pariyaram Medical College is adequate to cover the cost of providing MBBS course. There is irrationality in the demand of the self-financing institutions to increase the fees further. Any increase from the existing fee will lead to the exploitation of the MBBS students.

CONCLUSION

Professional education in Kerala is the most scrupulously commercialized stream of higher education. Along with the mushrooming of the private providers, the existing practice of cost recovery becomes much more futile with the imposition of a sightless fee for the user. The streams of the

engineering and medical education are the mostly affected. There is a rush of private providers in these streams of education. Since the cost recovery mechanism is not adequate, there is an urgent need of a mechanism to determine the fee structure which is rational. As the pricing is done by considering the cost side, the mechanism that can be suggested is the costing. Here it is the costing of Medical education, especially the course of MBBS to arrive at a rational fee for the student. Taking medical college, Thiruvananthapuram as a proxy, cost has been found out here. For checking the rationality of the fee in the self financing colleges, the cost has been compared with the fee structure in the Academy of Medical Sciences, Paryaram, which is taken as a proxy for them. There is a markable miss match between the cost and fee. In the context of the demand self financing colleges to raise the fee, it is found out that the private providers getting a markup profit of Rs.52627 which is enough for them as an incentive to be in this business. So any increase from the existing fee will be in a way exploitative. So there is an urgent need of regulation of the private providers. At the same time, there is possibility of increasing the user charges in the Government medical colleges as the subsidy is far higher.

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