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# Perspectives On Health Care Cost-Consciousness among Medical Students and Physicians

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## ABSTRACT

**Introduction:** Health care costs consciousness refers to care that aims to assess the benefits, harms and costs of interventions by the physicians. Rising health care costs have created an urgent need to improve physicians' knowledge on health care costs for providing cost conscious care.

**Objectives:** This study was done to assess and compare the knowledge and attitude towards health care cost consciousness of the undergraduate medical students and interns.

**Methodology:** A Mixed Method study was done using a standardized questionnaire among 388 medical students and a Qualitative approach using In-depth interviews with 15 practicing physicians and a Focus group discussion to understand their perceptions on cost-conscious care and their opinions on introducing Cost-conscious curriculum for the medical students. Data analysed using a framework analytical approach and NVivo12.

**Results:** 84% of the students agreed that all health personnel should be familiar with health care costs, 84.5% agreed that inclusion of the health care cost consciousness in medical curriculum is important for their carrier. The themes emerged identified the various perceptions, determinants on health care costs, cost-conscious decision making and their responsibility as a physician.

**Conclusion:** The physicians and interns strongly suggested including a structured learning on Cost-Conscious Care as a part of medical education to educate and train the future physicians.

**Keywords:** Cost conscious care, focus group discussion, health care expenditure, mixed method design, Qualitative research

## INTRODUCTION

In a resource-constrained situation, physicians are facing high demands-those of healthcare managements to adopt cost-conscious behaviours and ethical standards that obligate physicians to consider only their patients' best interests. The current state of healthcare economics is cause for growing concern not only in the developed countries but the burden and need is more in the developing countries.[1] Although as much as 87 % of all healthcare spending is directed by physicians, numerous studies have demonstrated that they lack knowledge of the costs of medical care.[2-4] Similarly, traditional medical education programs have not provided learners instruction on cost awareness.[5] Without formal education on cost-conscious care, learners may adopt practices that are modelled by supervising physicians. Historically, physicians have utilized a "more is better" approach, a practice which is then adopted by their learners. A study conducted in Scripps Mercy hospital at University of California explored that a simple educational intervention appeared to change the ra-

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diologic test-ordering behaviour of internal medicine residents.[6] Widespread adoption of similar interventions by residency programs could result in significant savings for the health care system. Many surveys of residents and doctors across multiple specialties suggest that current efforts to teach cost-conscious test ordering in undergraduate medical education are inadequate in developed nations. Numerous studies have demonstrated that the practicing physicians lack knowledge on health care costs.[7,8] Therefore, this study aims to assess the knowledge and attitude towards health care cost consciousness of the undergraduate medical students and interns. 2) To understand the perceptions of cost-conscious care among the practicing physicians and their opinions on introducing Cost-conscious curriculum in the medical education.

## METHODOLOGY

The study was done as a mixed method design including both quantitative and qualitative method. In the quantitative method, a Standardized survey questionnaire was used among 388 medical students after getting the informed consent. The data was collected over a period of two months. A total of 75 students from each batch of 150 were selected by simple random sampling. The Study tool consisted of self-administered validated questionnaire to elicit sources of knowledge on health care costs, health care responsibility, cost conscious decision making and curriculum. The questionnaire was developed based on the study done by Leon-Carlyle M et al.[11] by the authors. A pilot survey was done to a separate group of 30 medical students; the questionnaire was validated based on the preliminary results and suggestions. Students' attitudes related to health care costs were obtained using Likert scale – five-point scales ranging from strongly agree to strongly disagree (having a score between 5 to 1). Informed consent was obtained from each participant.

**Ethical Approval:** The study was approved by the Institutional Ethics Committee, Ref No: IEC No: TMCH/2019/032

**Data analysis:** The data was entered in the excel sheet and analyzed using SPSS software 21version. The results were expressed in percentages and chi-square test was done to test the significance. Multinomial regression analysis was performed.

The qualitative aspect of this study was done using In-depth interviews among the practicing physicians. Using purposive sampling, 15 practising physicians working in various private and government medical colleges and teaching hospitals were interviewed using In-depth interview guide after obtaining a written informed consent. The interview guide included questions on health care costs (HCC), cost conscious decision making and cost-conscious curriculum. Each Interview took 30- 45 mins and was conducted in a private place and recorded after obtaining informed consent.

A convenient sampling was done for focus group discussion (FGD), total of 8 interns posted in our department volunteered to participate were included. An FGD guide was sought to elicit the knowledge about the health care costs, cost conscious decision making and about the inclusion of cost-consciousness in medical curriculum. The focus group discussion took 45 mins with the active participation of the interns and recorded after obtaining informed consent.

All interviews were audio-recorded, and transcribed verbatim. The transcribed verbatim in Tamil were translated into English. We used the framework analytical approach to analyze interview data, which began with the process of data immersion. This involved repeated readings of each interview transcript for gaining familiarity with the data. It also enabled identification of emergent themes that best explained the research questions. The data were carefully scrutinized, quotes were selected which were then placed under the appropriate thematic content, and interpretations were drawn. Each transcript was coded using inductive and deductive approach and once all the interviews were coded, segments of text that were related to a common theme were put together, emergent themes were identified. The qualitative analysis was done using NVivo 12 software.

## RESULTS

### Quantitative Findings

The study was done among 388 medical students of which 37.6% (N=146) were males and 62.4% (N= 242) were females. The first-year students were 81 (21%), second year students 112(29%), third year students (Prefinal / Final year part I) 94(24%), Final year and Interns 101(26%) participated in the study.

Majority 72.7% of the students acquired the knowledge about the health care cost by their personal experience. The agreement rate for the health care cost responsibility variables were 83.5%, 81%, 71.4% and 75.5% on individual familiarity on health care cost, all health care personnel, responsibility of the patient and the physicians respectively.

As far as the decision making on health care costs, the 80% of the study participants agreed with the standardization of the cost among the hospitals and 78.6% agreed to displaying of the costs at the hospitals for the patients is needed. Cost conscious care by the health care personnel will improve the betterment of quality of care was agreed upon by 73.2% of the study participants. A majority of 84.5% of the study participants showed a positive attitude towards the inclusion of the health care cost consciousness in medical curriculum and they agreed that it will be useful for their future carrier.

**Table 1: health care cost consciousness variables**

| | Agree | Neutral | Disagree |
|---|---|---|---|
| **Sources of Knowledge** | | | |
| During UG curriculum | 188 (48.5) | 122 (31.4) | 78 (20.1) |
| Studying on my own | 218 (56.1) | 124 (32.0) | 46 (11.9) |
| Personal experience | 282 (72.7) | 74 (19.1) | 32 (8.2) |
| **Attitude towards HCC responsibility** | | | |
| Should be familiar with health care cost | 324 (83.5) | 51 (13.1) | 13 (3.4) |
| All health care personnel should be familiar | 314 (81.0) | 63 (16.2) | 11 (2.8) |
| It is the responsibility of patients | 277 (71.4) | 79 (20.4) | 32 (8.2) |
| It is the responsibility of physician | 293 (75.5) | 74 (19.1) | 21 (5.4) |
| **Attitude towards HCC decision making** | | | |
| Diagnostic tests should not be ordered unless it has the potential to change the management | 272 (70.1) | 91 (23.5) | 25 (6.4) |
| Generic drugs should always be considered before brand name | 276 (71.1) | 90 (23.2) | 22 (5.7) |
| HCC leads to betterment of the quality of care | 284 (73.2) | 84 (21.6) | 20 (5.2) |
| Details of HCC should be displayed at the hospital for patients | 305 (78.6) | 66 (17.0) | 17 (4.4) |
| Details of HCC should be standardized among hospitals | 310 (80.0) | 65 (16.8) | 13 (3.2) |
| **Attitude towards Cost conscious curriculum** | | | |
| I wish my medical curriculum would include formal teaching on health care costs and cost-conscious decision making | 289 (74.5) | 82 (21.1) | 17 (4.4) |
| It is important for my future carrier as a physician to learn about health care costs and cost-conscious decision making | 328 (84.5) | 47 (21.1) | 13 (3.4) |
| Formal teaching adequacy of Health care cost in curriculum | **Adequate** | **Neutral** | **Inadequate** |
| How much formal teaching have you had in medical college so far about health care costs or cost-conscious decision-making? | 46 (11.9) | 190 (49.0) | 152(9.1) |

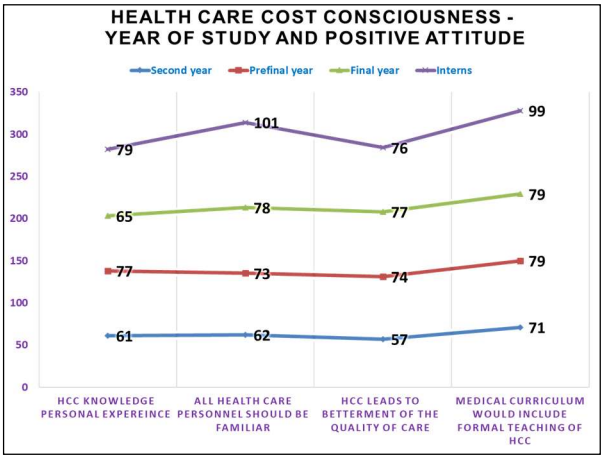


**Figure-1: Health Care Cost Consciousness- Year Of Study And Positive Attitude**

The agreement rate among the study participants were converted into binary variables and the multinomial logistic regression was performed. The extent of association among the variables with the health care cost conscious responsibility and decision making and curriculum inclusion of cost consciousness revealed that the increasing age and year of study were associated with the positive attitude towards the health care cost consciousness.

## QUALITATIVE FINDINGS

A total of 15 doctors working in various private and government medical colleges and teaching hospitals were interviewed. All were practicing physicians from various specialties with more than 10 years of clinical experience. Out of 15 doctors interviewed, 5 of whom were heads of their departments aged 40 years or more, while the remaining 10 were working as Associate/Assistant professors aged between 34 and 42 years.

### Themes of analysis

The thematic analysis identified the following themes from the In-depth interviews among the physicians were:

### Perceptions on Health care costs

A health cost was perceived as financial liability to a patient and affordability when patient comes to the hospital for medical or surgical treatment. Doctors know about the health care costs only from their personal experience like illness of a family member, friend or from their patient. Most of the physicians said they want to know about the exact cost of investigation, drugs cost, hospital charges so that they can guide the patients. It shows that even the practicing physicians lack the knowledge about health care costs. Few physicians expressed that the health care costs are high these days and it has turned into commercialization.

### Health care costs responsibility as a physician

Doctors considered the socioeconomic status and affordability before prescribing drugs and referred them to cost-effective public facilities. The physicians felt that it's their responsibility to provide better services to the people at a lower health care costs and they should motivate patients to take health insurance policies. The physicians should not carry away with the commissions and cuttings and they should order only necessary investigations.

### Determinants of Health care costs

In terms of the main determinants of health care costs, majority of the physicians said that it is due to the combination of factors like the government, policy makers, corporate leaders, multinational pharmaceutical companies, equipment costs and to a little extent doctors and patients. The health care costs can be decided by the hospital management. Most of them mentioned about the health insurance as an important factor in reducing the health care costs. The government is more responsible in determining the health care costs like fixing the treatment and investigations costs and increasing GDP on health care.

**Reasons explained for increase in exorbitant tests and procedures**

Monetary benefits are the primary reason for increase in tests and procedures. The doctors go for expensive procedures and diagnostic techniques because of the various legal issues linked with diagnosis and treatment and 50 % of the tests done for the safety of the doctors. Doctors are inspired to the new advancement in diagnostic techniques like trial investigations. Lack of patience by the patients to wait for systematic approach is one other reason.

**Perceptions on cost-conscious decision making**

Patients are stakeholders in decision making but in corporate sectors, both the patient and doctor do not have rights about cost consciousness because the costs are decided by the provider/hospital administration. Doctors should consider the financial status of the patient and their ability to pay the bills before prescribing a treatment. Sensitization programmes on health care costs will be helpful.

**Suggestions to reduce the health care costs by physicians**

The Government should make strict policies so that the hospitals have transparency in declaring their cost details to the public to cut the middle man profits. Health care costs can be reduced or minimized by taking into considerations of various factors influencing like reducing the marginal profits by the drug companies with a policy regulation by the government. A representative body from different segments of society like consumers, policy makers, health care providers should be formed and involved in the decision making on health care costs.

**Opinions on introducing cost-conscious curriculum for medical students**

All the physicians participated in the study said that they were not taught about the cost- conscious care during their undergraduate and post graduate period. So, they all strongly suggested to include a structured learning about health care cost to medical students. As future practising physicians, the medical students must be taught about the cost-conscious care in their curriculum which guides them to practise ethically and in cost-conscious decision making.

In the focus group discussion, the interns agreed unanimously that the physician alone has no role in health care cost decision but rather it can be decided with the team constituting doctors, hospital managers and the patients. The common agreements by the interns were on standardizing the health care cost among the hospitals and displaying for the patients which will reduce the communication barriers on health care costs. All the interns strongly agreed to include cost-conscious care in the medical curriculum. The interns felt that it will be very useful for them in their future medical practice in providing quality health care at the community level.

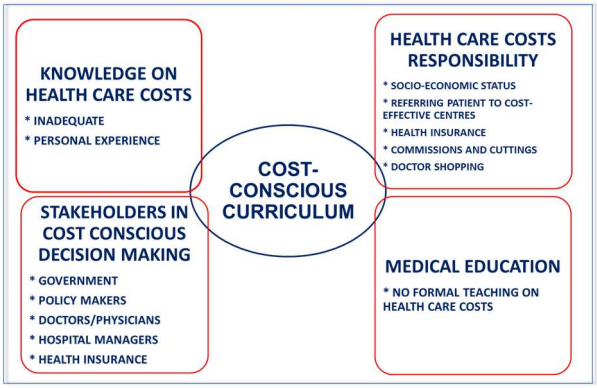


**Figure-2: Perspectives on Health Care Cost- Consciousness Curriculum- A Conceptual Framework**

**QUOTES**

*"Health costs means financial liability to a patient when patient comes to the hospital for treatment, either it can be a medical treatment or surgical treatment."-(Doctor, Male, 41)*

*I would advise them to have a health insurance/financial back-up of their own as I myself had a personal experience." -(Doctor, Male, 39)*

*"The main reason for high health care costs, according to my opinion is combination of factors like taxes by the government, manufacture cost of the equipment, high price of the foreign or imported equipment's and high price of pharmaceuticals. "-(Doctor, Male, 41)*

*"In case if a person is suffering from a very rare disease and the doctor did not diagnose it as he thought it is an unwanted investigation, the people can't understand that and they go to the consumer court and sue the doctor".-(Doctor, Female, 38)*

*"Yes, we need a structured level of learning about health care cost. I strongly believe that there should be a basic education on health care cost at UG level and it should be elaborated at PG level like "health economics" so that the doctors are fully informed and it helps them to guide their patients." -(Doctor, Female, 38)*

**DISCUSSION**

India has a vast health care system, but there remain many differences in quality between rural and urban

areas as well as between public and private health care. To cope up with the increasing healthcare costs, insurance is available, often provided by employers, but most Indians lack health insurance, and out-of-pocket expenditure make up a large portion of the spending on medical treatment in India.

Economic times coined the Indian health care system has five paradoxes like (1) Healthcare is a fundamental right, but it is not fundamentally right in India. (2) Health Sector attracts investments, but delivery remains contentious. (3) Among the cheapest in the world, yet unaffordable for most locally. (4) Less than one doctor for 1,000 patients, but medical tourism booms. (5) Stark divergence in healthcare outcomes within country.[9]

The new Graduate Medical Education Regulations intends to take the learner to provide health care to the evolving needs of the nation and the world. It also expresses that 'Competency Based Medical Curriculum' that has been prepared by the Medical Council of India would definitely serve the cause of medical education and in creating a competent Indian Medical Graduate to serve the community. [10] The aspect of health care cost consciousness has not been included in the formal medical curriculum and teaching cost consciousness to medical students is important in our health care system to function effectively as a primary health care physician.

Our mixed method study has explored several dimensions of the health care cost consciousness among the undergraduate students, interns, and practicing physicians from various specialties. The cross-sectional survey using the standardized questionnaire has revealed that the Cost-conscious care by the health care personnel will improve the betterment of quality of care was agreed upon by 73.2% of the study participants. Majority 84.5% of the students strongly agreed towards the inclusion of the health care cost consciousness in medical curriculum.

A cross-sectional survey of students by Marisa Leon-Carlyle, et al [11] at Harvard Medical School and University of Toronto, at both institutions, >96% of students agreed clinicians at all stages of training should be familiar with cost-conscious decision-making, 80% agreed physicians are responsible for discussing healthcare costs with patients, and over 80% felt they had too little education on the topic in medical school. Overall, 85% of students from both countries would like more formal teaching on this topic.

A thematic analysis study by Kimberly M. Tartaglia et al[12] among medical students completed a reflective exercise wherein they were asked to describe a scenario in which a patient experienced lack of attention to cost conscious care, and were asked to identify solutions and barriers. The results stated that even with minimal clinical experience, medical students were able to identify instances of lack of attention to cost-conscious care as well as potential solutions. With regard to potential solutions for reducing wasteful care and the associated barriers, students gravitated toward solutions that increased or improved communication within their healthcare teams or across teams (with consultants, referring hospitals, etc.) The use of evidence-based guidelines was also frequently cited as a solution.

In the focus group discussion, the interns expressed that the cost conscious decision making should be decided as a team with doctors, patients and the hospital managers. The interns have all opined on the inclusion of formal teaching session during the clinical postings to attain more insight on health care costs. One of the common agreements by the interns was on standardizing the health care cost among the hospitals and displaying for the patients which will reduce the communication barriers on health care costs.

Without formal education on cost-conscious care, learners may adopt whatever practices are modeled by supervising physicians. Historically, physicians have utilized a more is better approach, a practice which is then adopted by their learners.[13]

In 2010, Molly Cooke published her perspective on the responsibility of medical education to teach cost consciousness,[14] and other medical educators have subsequently called for an integration of cost information into the education of future physicians.[15-17] One of the important aspect or the solution is to educate medical students and train the interns in settings where they have opportunities to develop and use cost-conscious strategies in caring for patients in their hospital postings.

## STRENGTHS

The qualitative aspect of this study provided more insight and in-depth understanding about the various perspectives on cost-conscious care among the practicing physicians and interns.

## LIMITATIONS

The study participants from a single institution because of logistics. We could have included students from government and other private medical colleges for a representative sample.

## CONCLUSION

The medical students and physicians showed a positive attitude towards learning about the cost-conscious care and strongly agreed to include it in medical curriculum. The medical graduates must have a basic understanding of how health care is financed, about the national health care policies, and the politics that shape financing and workforce

choices. Cost-Conscious Care must be introduced as a part of medical education to educate and train the future physicians.

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