**INTRODUCTION**

South Asia is a world of contrasts. Despite rapid economic development, the region still has the second largest number of people living on less than US$ 1 after sub-Saharan Africa.

South Asia has a large number of medical schools and produces a good proportion of the world’s medical manpower. Table I shows the number of medical schools in various South Asian countries.

In this article, I would like to focus on the vital importance of orienting the doctors towards the community and shifting from a predominantly hospital-based to a community-based medical education. The community can serve to highlight the importance of a number of issues to medical students. In this manuscript, the authors will be concentrating on the challenges posed by climate change, aggressive promotion by the pharmaceutical industry and the changing nature of the doctor-patient relationship. The community-based learning will also highlight the importance of research (including student research) to improve the health status of the community.

**ABSTRACT**

South Asia has vast unmet health needs especially in rural areas. Community-based medical education can partly address these needs and can serve to introduce students to a number of community health problems. Climate change has the potential to produce major challenges for health and food security in South Asia. Medical students should be taught about climate change and methods to tackle its impact on health. The pharmaceutical industry in South Asia aggressively promotes their products. Disease mongering is becoming more common in South Asia. Educational initiatives to sensitize students regarding promotion are common in developed countries. In Nepal, an educational initiative critically looks at the industry’s promotional tactics. Similar initiatives are required in other medical schools. The nature of the doctor-patient relationship is changing. An increasing demand for patient autonomy and for their involvement in therapeutic decisions is seen. Access to the internet and internet sources of health information is increasing. Medical schools should address these issues as well. Medical Humanities modules and courses in communication skills are required.

Research can play an important role in alleviating the health problems of South Asia. Students should be taught the basics of scientific research and student research should be strongly encouraged.

**Key words:** Community-based learning, Challenges, Medical schools, Medical education, South Asia.

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**Table I:** Number of medical schools in South Asia.

<table>
<thead>
<tr>
<th>Country</th>
<th>Number of medical schools</th>
</tr>
</thead>
<tbody>
<tr>
<td>India</td>
<td>271</td>
</tr>
<tr>
<td>Pakistan</td>
<td>52</td>
</tr>
<tr>
<td>Nepal</td>
<td>13 (two more are to start shortly)</td>
</tr>
<tr>
<td>Bangladesh</td>
<td>33</td>
</tr>
<tr>
<td>Sri Lanka</td>
<td>6</td>
</tr>
<tr>
<td>Afghanistan</td>
<td>4</td>
</tr>
<tr>
<td>Maldives</td>
<td>None</td>
</tr>
<tr>
<td>Bhutan</td>
<td>None</td>
</tr>
</tbody>
</table>

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Community-based medical education: South Asia has vast unmet health needs especially in the rural areas. Community-based medical education may play a vital part in meeting these health needs. Community-based teaching programme is one in which the community plays an important role in determining its own needs and solving its own health problems in coordination with other healthcare professionals at the same time helping students to attain their educational objectives.1 The Institute of Medicine (IOM) in Kathmandu, Nepal, follows a community-based curriculum and students spend time in the rural areas throughout the course. Community diagnosis and working with the community to improve its health and economic status is emphasized. Community diagnosis is a comprehensive assessment of the health status of a community in relation to its social, physical and biological environment.2

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Community-based learning offers benefits to the schools, the students and the community. In Australia, a medical school offers community-based education in a rural area. Students learn medical dimensions by sharing experiences with their medical mentors and human dimensions by sharing experiences with their patients. The authors conclude that (teaching) hospitals are no longer appropriate for teaching a large part of the medical curriculum. At the UNITRA medical school in South Africa, a community-based educational programme has been running for many years. Students provide acute and preventive medical care to the local community getting trained in the use of a broad range of diagnostic and therapeutic skills in the absence of investigative resources. In South Asia, many medical schools have strong community medicine departments and community health programmes but learning continues to be largely hospital-based.

A rethinking to provide a large part of the training in community health facilities is required. Greater integration and cooperation between departments (basic and clinical sciences) is necessary. General practitioners can be trained to act as tutors as is common in many developed countries.

The training program should be conducted in both urban and rural communities and among different socio-economic strata of society. In bigger countries, there are regional variation in social and economic indices and postings in other states and regions can be considered. Language, cultural and administrative problems should be resolved before this can be achieved. Many medical colleges are run by state governments or local bodies in urban areas and sending students to another state requires that language and issues of jurisdiction are resolved. The benefit is the holistic view of the country, which the future doctor can obtain. Interaction with the community and the community diagnosis programme can introduce the students to a number of problems (both predominantly medical and non-medical) which have a bearing on the health of the community.

**The challenge of climate change:**
Climate change is emerging as a major threat to public health with a large proportion of the burden falling on the economically poor countries. The South Asian countries are getting rapidly urbanized and in many countries, the major cities are located in coastal areas. Rising sea levels due to global warming can threaten many costal cities. Many health outcomes like heat-related mortality/morbidity, illnesses related to air pollution, infectious diseases are sensitive to climate. With increasing temperature vectors of disease can thrive and malaria and other vector-borne diseases can be seen at higher altitudes.

Many rivers in South Asia flow from the Himalayas. With the melting of and retreat of glaciers in the Himalayas, the South Asian region faces the risk of catastrophic floods initially and later the risk of drought. This can have a catastrophic effect on food security in South Asia.

Changing disease patterns, coastal erosion and loss of habitat, urban air pollution, heat-related diseases, water scarcity and malnutrition may be major problems consequent to global warming. Our medical education system should empower doctors and medical students with the tools necessary to address these challenges.

There should be a module on global warming and climate change. Doctors as learned and respected members of society have an important role to play in convincing politicians, policy-makers and others about the dangers of global warming and the need for urgent steps to tackle it. The community diagnosis projects can serve as a good introduction to the effects of climate change on rural and urban communities and can also introduce them to various initiatives, which can reduce the problem at an individual and community level.

A recent article had pointed out to doctors abusing the energy and power supply sources. Doctors can set personal examples in conserving energy and minimizing green house gas emissions. The community diagnosis postings and field visits are good opportunities to develop advocacy skills among students. Students have to be trained to handle medical emergencies due to the re-emergence or spread of vector-borne diseases. They should also be trained to deal with extremes of climate and the diseases produced.

**The challenge of aggressive pharmaceutical promotion:**
The South Asian pharmaceutical industry is becoming more powerful. In India, the pharmaceutical industry is a leading sector of the economy and aggressive marketing and unscientific use of expensive, hazardous medicines has been noted. In Nepal, many rural areas lack access to medicines but Kathmandu and other cities are becoming booming markets for medicines.

Disease mongering is fast emerging as a major problem in many parts of the world and can turn ordinary ailments into medical problems, see mild symptoms as serious, treat personal problems as medical ones, see risks as diseases and frame prevalence estimates to increase potential markets for medicines. In Asia, conditions like erectile dysfunction, male pattern baldness, attention deficit hyperactivity disorder and irritable bowel syndrome and the drugs for their treatment are widely promoted. Doctors have an important role in combating disease mongering. The community can serve as a stage to introduce students to these problems.

The world over, there is an increasing call for the disentanglement of doctors from the pharmaceutical...
industry. It has been recommended that all health professionals should be educated explicitly about evaluation of evidence and promotion, helped to understand that there is no proven method for doctors to obtain more benefit than harm from promotion, trained to avoid pharmaceutical promotion and educated about reliable sources of medicines information.

Various initiatives to combat aggressive promotion and teach medical students about promotion have been carried out in many countries. However, educational initiatives on pharmaceutical promotion are not common in South Asian medical schools and very little time is devoted to teaching this complex topic. At the Manipal College of Medical Sciences (MCOMS), Pokhara, Nepal, an educational initiative looks critically at pharmaceutical promotion. Class activities are carried out in small groups. Activities include critical analysis of promotional material and drug advertisements against the World Health Organization’s Ethical Criteria for Medicinal Drug Promotion. Students are taught about strategies used by medical representatives (MRs) to promote their products and how doctors can critically analyze the presented information.

Educational initiatives looking at pharmaceutical promotion should be urgently taken up in South Asian medical schools. Critical analysis and appraisal of information and maintaining a ‘proper’ relationship with the pharmaceutical industry are important issues for a doctor. Aggressive promotion can lead to irrational use of medicines, increase the cost of treatment and have an impact on the doctor-patient relationship.

The challenge of the changing nature of the doctor-patient relationship:

The doctor-patient relationship constitutes the very core of medicine. It has been noted that the relationship is still paternalistic and can be summed up by the phrase ‘Doctor knows best’. Recently, there has been an increased emphasis on individual control and freedom and medical paternalism is no longer accepted unquestioningly by society. A greater need for effective communication between the doctor and the patient and increasing patient demands for autonomy and self-determination are the two major challenges facing the relationship.

In South Asia, with rapid economic growth and increasing education levels, patients are becoming more aware of their rights and many want to play a more active role in their treatment. In Singapore and other developed nations, the internet has revolutionized healthcare delivery. Patients are beginning to communicate with doctors through email; they are using the internet to locate information and are even self-prescribing through online vendors.

Use of the internet by patients to access health information will increase in the future. Access to the internet in South Asia is common among upper and middle class patients. Seeking useful and valid information on the internet can be difficult because of lack of control and the speed of accumulation of information. Doctors should be aware of criteria to assess the quality of internet health information and be able to teach the same to their patients.

In the US, eight major factors were said to have led to the end of the golden age of doctoring. These were less support from the state for healthcare, corporatization of doctoring, threat from other healthcare workers, globalization and the information revolution, changes in the public conception of the body, decrease of patient trust in the doctor, oversupply of doctors and weakening of physician unions. Certain of these factors may also be relevant in South Asia.

Patient-centred attitudes were studied among medical students in Nepal. A decline in empathy has been observed as students progress through medical school. The Medical Humanities (MH) are taught in medical schools in many countries and may have a role in maintaining a positive attitude among students. In California, USA, an elective medicine and literature course had been shown to contribute to greater student empathy and an appreciation of the value of humanities in medical education.

At MCOMS, the department of Medical Education had conducted a voluntary MH module for medical students and interested faculty members. Literature and art excerpts, case scenarios, role plays and debates are used to explore various issues in the humanities. MH programmes should be initiated in medical schools. The module should employ small group activity-based learning. The doctor-patient relationship, the patient, the care giver, empathy, breaking bad news, and death is among the important topics to be covered. Students as future doctors should be culturally aware and sensitive. The patient should be approached in a holistic manner considering his/her family, neighbours, village and society.

Formal training in communication skills for students is necessary and is common in developed countries. In MCOMS, the department of pharmacology conducts sessions on communication skills for students. The department of pharmacology at KIST Medical College intends to continue and further develop these sessions. Students are taught to deliver non-pharmacological and pharmacological information about a common disease condition to a simulated patient. Formal communication skills training during the clinical years is lacking. Role plays, case scenarios and simulated patients are an effective way to teach communication skills. Later, students can communicate under supervision with ‘real’ patients.

Community-based education can introduce students to various health problems of the community and sensitize
them regarding the importance of research to solve these problems.

The challenge of promoting student research:
South Asia has a quarter of the world’s population, weak public sector healthcare and a heavy disease burden underscoring the importance of research. A long-term strategy for promoting health research is to target medical students and involve them in research. Student research projects can provide students with an opportunity to learn research methodologies and skills for critical analysis of published literature. Student research has been carried out in certain medical schools in South Asia.

Students should be taught the principles of scientific research and a community research project should be mandatory. Funding and infrastructure for research should be developed and marks should be allotted for research. Research publications should be considered during admission to postgraduate programmes. Faculty actively pursuing research can act as powerful ‘role models’.

CONCLUSION
Adoption of community-based learning can serve to reorient medical education and make it more focused to the needs of South Asia. The community can serve to introduce students to a number of health and socioeconomic problems and can also equip them with skills necessary for their solution. The focus on climate change, aggressive pharmaceutical promotion and the changing nature of the doctor-patient relationship can be pivotal. South Asia faces enormous health problems. Research is vital in addressing them and medical students can play a vital role in research. Student research should be encouraged.

REFERENCES
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