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Problem based learning (PBL) - approach to learn medicine: an experience from a medical school of Nepal



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The author has joined Manipal College of Medical Sciences (MCOMS), Pokhara in MBBS course when I was just 18 yrs of age, in January 2002 (Batch of 2001). The author is currently working as an Assistant Professor in the Department of Pharmacology, MCOMS. He is privileged enough to see MCOMS from the eyes of a student (undergraduate and post graduate), intern then as a medical officer and now from the faculty point of view and enjoyed every steps of it! [1, 2]. The author is also very honored to be the first MD in Pharmacology from MCOMS and also the first MD in Pharmacology of Kathmandu University from Nepal [3].

Manipal College of Medical Sciences is a centre of excellence for quality medical education. The working environment is good and peaceful. To work at MCOMS is a huge experience. MCOMS is providing the best medical education in Nepal since 1994 [4].

Problem Based Learning (PBL) Based Approach to Learn Medicine is a novel approach in Nepal. We have started this approach from 2013 onwards in this medical school [5]. Problem Based Learning approach is quite a different approach to learn medicine and is a better technique than case oriented approach. It is a self directed learning. We conduct PBL Session in small groups comprising of 20 students (because of 150/ batch intake) IN 3 Sessions 2 hrs each. Students get an idea about the topic and able to integrate different subjects, not only basic science subjects but also the clinical subjects too.

Example of PBL which we have conducted recently in MCOMS

Trigger 1

A 33 year old female named Salina Gurung came to Manipal Teaching Hospital, Medicine OPD with complaints of dizziness, weakness, malaise, fatigue, breathlessness on exertion. These symptoms have been present since 3 months after the birth of her 4th child. After the delivery she gave history of Per vaginal bleeding for 15 days which was later controlled by medication. Later on she was discharged on oral hematinics.

Learning Objectives:

1. What is dizziness, malaise, fatigue, breathlessness?

2. Different grading of breathlessness.
3. Causes of dizziness, malaise, fatigue, breathlessness?
4. What are the causes of PV Bleeding?
5. Components of Blood, Synthesis of RBC, WBC, Platelets, Normal and abnormal sites of hematopoiesis, function of blood cells and plasma proteins.
6. Bleeding disorders.
7. What are the Differential Diagnosis based on Trigger 1.

Trigger 2

She is a vegetarian, her personal and family history suggest that their family is dependent on farming. She is a non smoker and non alcoholic. On examination she is thin and short stature. She looks pale.

Learning Objectives:

1. Significance of diet and socio economical status.
2. Structure of Haemoglobin, Types of Haemoglobin, and Different forms of iron, what is ferritin, transferrin and apoferritin. Iron Metabolism

Trigger 3

Vitals

Pulse: 110/min

BP: 90/60 mm of Hg

RR: 20 /min

On Auscultation: Soft Systolic murmur was heard

Trigger 4

CBC: Normal

Haemoglobin: 7 gm%

Peripheral Blood Smear: Microcytic Hypochromic

Blood Grouping: A+

Reticulocyte count: Increased

BT, CT: Normal

PCV, MCV, MCH, MCHC: Decrease

Low serum ferritin

RDW: increase

ECG: Decreased RR interval

Learning Objectives:

1. Nutritional assessment of B12, folic acid and iron
2. What is pulse. Types of pulse. Measurement
3. BP: Definition, Measurement, Factors modifying BP.
4. RR: Definition, Measurement.
5. Murmur: Grading
6. Heart sound
7. Normal RBC indices

8. ECG
9. Define and classify anaemia. Causes and types of anaemia
10. Blood grouping

Trigger 5

Patient was advised to take oral medications for iron deficiency anaemia

Learning Objectives:

1. Oral Hematinics. Different iron preparations, uses, adverse effects, contraindications, mechanism of action and doses of different iron preparations.

By this problem based learning approach a medical student can study any topic in an integrated manner. They can go to any extend. Medical Science is an ever growing subject. Knowledge what a student gains during the course of study have to be applied in patients. One major problem of teaching in Basic Science in Nepal is that a student doesn't see patients. This problem can be solved to some extent by this novel problem based learning approach to learn Medicine, which is now commonly followed in all the medical schools which are affiliated to Kathmandu University of Nepal.

Authors' information

Dr. Indrajit Banerjee MBBS, MD Pharmacology. Currently working as a Assistant Professor in the Department of Pharmacology, Manipal College of Medical Sciences, Pokhara, Nepal and Chief of Manipal Sanjeevani Clinic. He is in the editorial board of Medical Science (MS), and Nepal Journal of Epidemiology (NJE). He was an Organizing Committee member of International Epidemiological Association Conference 2013 and Confederation of Epidemiological Associations (CEA) Conference December 2013 Organized by Mahatma Gandhi University.

Competing interests

Author doesn't have any competing interest.

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