Original Article

Medical Student's Perception About The Integrating Methods Of learning Medical Subjects And Importance Of Psychiatry In Pre-Clinical, Para-Clinical And Clinical Learning

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Abstract

Background:
Now a day's important elements being planned and used in the curriculum is vertical integration, i.e. integration between the clinical and basic science sections of the curriculum, and horizontal integration i.e. between different subject areas. Integration throughout the whole curriculum is time-consuming for both teachers and students and hard work is required for planning, organization and execution. Psychiatry is an important subject in medical sciences and knowledge of this subject is helpful in understanding function of body, mind and related issues which are modified by disease processes. Aim of the study is to assess the importance of horizontal and vertical integration in an undergraduate medical curriculum and importance of Psychiatry in pre-clinical, para-clinical and clinical learning, according to opinion among fourth year MBBS students.

Methods and materials:
A self administered questionnaire was used among all the consenting 4th Year MBBS Students of BPKIHS, Dharan, Nepal (324 of 400 responded) of four consecutive years to know about the importance of psychiatry as a subject and different components of the undergraduate medical curriculum including vertical and horizontal integration. They were asked to assign between three options to each question (from agree, neutral and disagree).

Results:
The result showed that majority of the students were in favor of vertical integration of the various subjects and admitted the importance of psychiatry as a subject and its knowledge helps them in better understanding of the other subjects included in medical curriculum.

Conclusions:
Vertical integration of medical subjects may be better than horizontal Integration for teaching and learning as this help students to understand the medical subject's in a superior way. This study also reveals that as of its importance in the medical curriculum, subject of Psychiatry should be given more emphasis during the undergraduate training period.

Key Words: Psychiatry, curriculum, para-clinical, clinical, vertical and horizontal integration.

INTRODUCTION

Integration in modern medical curricula means leaving the traditional discipline based discrete segmentation and separation of learning and teaching activities within separate compartment. By integration, information overload can be avoided, barriers between subject areas can be removed and better learning avenues for students can be provided so that it will help them imbibe knowledge that is pertinent and significant to clinical practice, is open to amendment, is deep and retrievable, updating and expansion as a part of an lifelong ongoing education. Integrating and teaching traditional basic science subjects (such as Anatomy, Physiology and Biochemistry) of medical education concurrently is called horizontal integration while if basic sciences are studied at the same time parallel to and integrated with clinical subjects, it's called as vertical integration (Lie, 1995).[1] To achieve integration effective management of change, requirement of in-depth review of the curriculum, commitment and agreement of faculty, departments, individuals and development of teams and structures to support planning and implementation are required. Benefit of integration includes improved motivation, satisfaction, self appraisal and professional socialization .[2] Curriculum integration usually involves both horizontal and vertical integration and is the pattern that is becoming widespread throughout the world.

All of us are aware of the vast extent of psychiatric morbidity and the burden on people, communities and nations as of psychiatric problems. Psychiatry is important for two quite different reasons, one specific and the other general. These are directed primarily at the teaching of psychiatry, and more generally at health service delivery i.e. clinical policy. [3,4] The World Psychiatric Association and the World Federation for Medical Education have collaborated to define the core curriculum in psychiatry, for equipping all future doctors to identify and treat mental illness and disability. The World Conference on Medical Education, held at Edinburgh in 1988, concluded with the Edinburgh Declaration (World Federation for Medical Education-WFME, 1988). WFME instituted the Global Curricula Project, designating six key specialties in which the importance of health promotion was inarguable: public health, general practice, paediatrics, otorhinolaryngology (ENT), psychiatry and neurology (World Federation in Neurology, 1994).

Psychiatry generalized approach stresses the unity of body and mind. Skills learned in psychiatry are helpful to all doctors. Psychiatric problems are common among patients seen by doctors irrespective of the branch of medicine. Importance and place of psychiatry in the medical curriculum is now generally agreed. There are three reasons for this agreement. [5] First, the general approach of psychiatry which stresses the unity of body and mind is important in the whole of medical practice. Secondly, skills that are learned in psychiatry are important for all doctors: for example the ability to form a good relationship with a patient, to assess the mental state, and to impart distressing information. Thirdly psychiatric problems are common among patients seen by doctors working in all branches of medicine: for example it is known that among outpatients attending specialist clinics about 15 per cent of those given a diagnosis have an associated psychiatric disorder, and an average of 20-30 per cent of those given no medical diagnosis have a psychiatric disorder. Psychiatric disorders are even more frequent among patients attending general practice.[6] So it can be argued that a sound base in psychiatry should be helpful in understanding the other medical subjects and will help medical student to understand the concerned subject in a more holistic manner.

This study was undertaken to assess the medical student's perception about the integrating methods of learning medical subjects and importance of psychiatry in the overall context.

METHODS

For evaluating the opinions, this study was conducted among consenting 4th year medical students of four consecutive batches of BPKIHS, Dharan, Nepal. BPKIHS runs undergraduate medical education program with a community oriented and integrated MBBS curriculum since 1994 and the post graduate program since 1999. Clinical sciences are taught from the very beginning and teaching is organ system oriented and not discipline oriented. An institutional approval was obtained for the study from the Institute ethical review board (IERB) and informed consent was taken from all participants. A self administered questionnaire to all students of 4th Year MBBS of four consecutive batches of BPKIHS at the end of their psychiatry theory classes and two week psychiatry department posting was distributed and 324 of them responded.

They were asked to give opinion about the importance of Psychiatry as a subject and different components of the undergraduate medical curriculum including their views on vertical and developed by the department of Psychiatry for the purpose .The type of study is cross-sectional, descriptive. The datas collected were analyzed and basic descriptive statistics were extracted, and the frequencies of responses were calculated to examine response of medical students in regard of their opinion about the mode of integration in medical curriculum and the importance of psychiatry in their understanding of pre-clinical, para-clinical and clinical Learning.

horizontal integration. Students were asked to assign between three options to each question (from agree, neutral and disagree) in a semi-structured performa

RESULTS

The result as obtained in this study is given in table no. 1 and 2. Total number of participant's completing the questionnaire was 324 (i.e. 81% response rate) out of one hundred fourth Year MBBS Students each from four consecutive batches. Out of 324 subjects who responded, 260 were male (80.24%) and 64 female (19.75%). Majority of the students belonged to urban part i.e. 223 students (68.83%) and English (282 students i.e. 87.03%) was the most common medium of education at school.

Table 1. Socio-Demographic characteristics of Subjects.

Intake MBBS batch Year*	No. of Subject Participating in this Study (N)	Sex		Residential Status			Medium of Education at School (E-English; N-Nepali; H-Hindi O-Others)			
		Male	Female	Urban	Semi Urban	Rural	E	N	H	O
2007	81	65	16	56	19	6	70	6	3	2
2008	79	66	13	57	15	7	68	8	3	0
2009	76	61	15	54	12	10	67	4	4	1
2010	88	68	20	56	20	12	77	10	1	0
Total	**324**	**260**	**64**	**223**	**66**	**35**	**282**	**28**	**11**	**3**
Percentage (%)	81.00	80.24	19.75	68.83	20.37	10.80	87.03	08.64	03.40	00.92

*Student Intake in each batch at BPKIHS, Dharan, Nepal is 100.

Regarding the integration in medical curriculum students were in favor of both type i.e. vertical as well as horizontal integration but when both of them were compared, 263 students (81.17%) were found to be more in favor of vertical integration. Only 64 (19.75%) of the students were of the opinion that having good information base in subject of psychiatry help in understanding pre-clinical subjects of Anatomy, Physiology & Biochemistry. For the para-clinical subjects i.e. Pathology 28 Students (08.64%), for Microbiology 42 students (12.96%), for Pharmacology 123 students (37.96%) and for Forensic medicine 128 students (39.50%) agreed that knowledge of Psychiatry helps in understanding these subjects. In clinical subjects of Radiology (25 students i.e. 07.71%), Ophthalmology (78 students i.e. 24.07%), ENT (104 students i.e. 32.09%), Orthopedics (124 students i.e. 38.27%), Surgery (138 students i.e. 42.59%), Gynecology & Obstetrics (198 students i.e. 61.11%), Community medicine (215 students i.e. 66.35%), Internal Medicine (230 students i.e. 70.98%) and Pediatrics (235 students i.e. 72.53%) was the percentage of students agreeing to the fact that knowledge of psychiatry helps in understanding these subjects. Two hundred seventy students (83.33%) gave the verdict that as a whole psychiatry is one of the base pillars of medical science and helps to become a good clinician and hence had very good opinion regarding the importance of psychiatry subject in the field of medical science.

Table 2.Perception of Medical Students about integrating methods of learning medical subjects and importance of Psychiatry.

S. No.	Statement	N=324 (M 260 ; F 64)		
		Agree	Neutral	Disagree
1.	Horizontal integration i.e. teaching integrated related basic science subjects such as Anatomy, Physiology and Biochemistry during the initial part of MBBS studies is more productive and beneficial.	M 179 , F 48 ; T 227 (70.06%)	M 70 , F 12 ; T 82 (25.30%)	M 11 , F 4 ; T 15 (04.62%)
2.	Vertical integration i.e. teaching basic science subjects parallel to and integrated with clinical subjects is more productive and beneficial.	M 186 , F 47 ; T 233 (71.91%)	M 70 , F 16; T 86 (26.54%)	M 4, F 1; T 5 (01.54%)
3.	Students get better understanding and grasp of the subjects with vertical integration in comparison to horizontal integration.	M 213, F 50; T 263 (81.17%)	M 42, F 13; T 55 (16.97%)	M 5, F 1; T 6 (01.85%)
4.	Psychiatry helps in understanding basic medical science subjects. [Anatomy, Physiology & Biochemistry]	M 54, F 10; T 64 (19.75%)	M 127, F 37; T164 (50.61%)	M 79, F 17; T 96 (29.62%)
5.	Knowledge of Psychiatry helps during Pharmacology classes.	M 95, F 28; T 123 (37.96%)	M 84, F 19; T 103(31.79%)	M 81, F 17; T 98 (30.24%)
6.	Psychiatry subject has important role to play in understanding Forensic medicine and toxicology.	M 101, F 27; T 128 (39.50%)	M 72, F 18; T 90 (27.77%)	M 87, F 19; T 106(32.7%)
7.	Knowledge of Psychiatry helps during Pathology classes.	M 25, F 3; T 28 (8.64%)	M 152, F 42; T 194(59.87%)	M 83, F 19; T 102(31.48%)
8.	Strong base in Psychiatry makes you understand easily the subject of Microbiology [host parasite relationship and pathogenesis of disease, immunity to infection, disinfection and sterilization, bacteriological examination etc.]	M 34, F 8; T 42 (12.96%)	M 120, F 36; T 156 (48.14%)	M 106, F 20; T 126(38.88%)
9.	The broad goal of teaching in Community Medicine is to prepare the student to function effectively as a Community physician and Psychiatry helps in it.	M 174, F 41; T 215 (66.35%)	M 85, F 22; T 107(33.02%)	M 1, F 1; T 2 (0.61%)
10.	Study of Psychiatry helps in Ophthalmology posting.	M 62, F 16; T 78 (24.07%)	M 167, F 40; T 207 63.88%)	M 31, F 8; T 39 (12.03%)
11.	Psychiatry subject has important role in understanding subject of ENT.	M 91 , F 13; T 104 (32.09%)	M 146, F 43; T 189(58.33%)	M 23, F 8; T 31 (09.56%)
12.	Psychiatry information helps in understanding Surgery subject.	M 110, F 28; T 138 (42.59%)	M 128, F 30; T 158(48.76%)	M 22, F 6; T 28 (08.64%)

13.	Strong base in Psychiatry helps in understanding Radiological findings while a student is posted in the department.	M 20, F 5; T 25 (07.71%)	M 114, F 33; T 147(45.37%)	M 126, F 26; T 152(46.91%)
14.	Knowledge gained by study of Psychiatry subject helps a lot while in Gynecological & Obstetrics posting.	M 159, F 39; T 198 (61.11%)	M 78, F 21; T 99 (30.55%)	M 23, F 4; T 27 (08.33%)
15.	One can deal better with Pediatric patient if he has strong base in Psychiatry subject.	M 190, F 45; T 235 (72.53%)	M 69, F 18; T 87 (26.85%)	M 1, F 1; T 2 (00.61%)
16.	Psychiatry subject Knowledge helps a lot during the Orthopedics department posting.	M 103, F 21; T 124 (38.27%)	M 139, F 40; T 179(55.24%)	M 18, F 3; T 21 (06.48%)
17.	As a student I have benefited from the learning of Psychiatry in my Department of Internal Medicine posting while assessing and investigating patient with.	M 191, F 39; T 230 (70.98%)	M 67, F 25; T 92 (28.39%)	M 2, F 0; T 2 (00.61%)
18.	As a whole psychiatry is one of the base pillars of medical science to become a good clinician.	M 215, F 55; T 270 (83.33%)	M 37, F 7; T 44 (13.58%)	M 8, F 2; T 10 (03.08%)

DISCUSSION:

This study generated a high response rate (81%) and hence enables us to draw some common conclusions from the generated data. Some previous study on medical curriculum design has been able to generate a response rate of around 30% (Vernon & Hosokowa, 1996) and 78% (Brynhildsen J. et al. 2002). 3 From the response rate and the feedback received it can be said with confidence that though the questionnaire had not been validated previously but it was simple and easily understood. In this study we found that though students favor both type of integration but still vertical integration appears as the choice of integration in the medical curriculum and our finding in this regard is similar as previous studies. Previous studies also have cited the vertical integration to be the better option as it is expected to motivate the students to accomplish deeper learning and understanding of both clinical medicine and basic science knowledge. 2, 3 Dahle LO et al (2002) found that vertical integration will stimulate the students to look more deeply into biological principles, mechanisms, etc. and will put theoretical knowledge into context. 2 They also noted that integration leads to encounters and encourage collaboration between teachers from different departments, not only within undergraduate education but also within research. Integration makes clinicians look deeper into their subject matter and also look more seriously at methods for clinical finding and treatment.

As per the various estimates and different health regulatory bodies, Psychiatric disorders are common, costly and carry a high disease burden. 7,8 Though effective treatments are available and early intervention can prevent disability but with a worldwide shortage of psychiatrists, it is expected and felt that majority of the patient are not getting expert opinion and treatment. Despite recruitment efforts, there is still a shortage of medical students attracted to psychiatry as a career, but there is an important group of students who are interested in psychiatry with 14% (about 1 in 7) putting it in their top three specialty choices. 9 During the undergraduate training period, there is a provision of clinical attachment in psychiatry which helps students to learn the subject, recognize common mental disorders and initiate, or refer for, evidence-based treatments, realizes subject's importance and may be inspired to consider psychiatry as a career. In this study participants rated the importance of understanding of psychiatry subject and potential gains that get accrued as of this while learning other subjects during their MBBS course. 10,11 Less than one fourth of participant's were of the opinion that knowledge of Psychiatry is helpful and important for understanding the medical science subject's like Radiology, Pathology, Microbiology, Anatomy, Physiology, Biochemistry and Ophthalmology. ENT, Pharmacology, Orthopedics, Forensic medicine and Surgery were the subject where student found it to be important in this regard. While in subjects like

Gynecology & Obstetrics, Community medicine, Internal Medicine and Pediatrics in which students opined that knowledge of psychiatry is very helpful in understanding the subject as well as while dealing with the patients. It has been found that professional advancement, job security, prestige and financial prospects are the major issues guiding the medical graduate to choose a specialty in their future.12 It seems that psychiatry as a specialty has the potential to fulfill them, which is evident from the fact that 83.33% of the students gave the verdict that as a whole psychiatry is one of the base pillars of medical science and helps to become a good clinician.

From this study, we can infer and suggest that as per the fundamental nature of a global core curriculum, setting out the specific competence in psychiatry to all doctors, is a very important task ultimately leading to the point that all future doctors should be educated and trained about the prevention, diagnosis and treatment of the mental illness.

CONCLUSION:

This was a cross-sectional study amongst a group of medical students in BPKIHS, Dharan, Nepal. The results from this study showed that majority of the students were in the favor of vertical integration than horizontal integration as according to them this helped them to understand the medical subject's in a better way. Regarding the role of psychiatry in Pre-clinical, Para-clinical and Clinical Learning, it was a mix bag as student felt that for some of the subject it was better to have a strong base in psychiatry while in other subject intermediate or very little role of psychiatry was cited by the students. Overall it can be said that the psychiatry has a role to play in medical science subject's learning. More than Eighty three percent (83.33%) of the participant's opined that as a whole psychiatry is one of the base pillars of medical science and helps to become a good clinician and hence had very good opinion regarding the importance of psychiatry subject in the field of medical science.

This study also reveals that as of its importance in the medical curriculum, subject of Psychiatry should be given more emphasis during the undergraduate training period.

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