The Model of a Physiotherapy Syllabus Based on Choice Based Credit System (CBCS)

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ABSTRACT

BACKGROUND

Current professional and higher educational curriculum reforms demand the implementation of Choice-Based Credit System (CBCS). In India, the University Grants Commission (UGC) has notified about use CBCS. Some health sciences universities have started its implementation but not much attempts were made in designing a BPTTh syllabus as per CBCS framework. We wanted to propose a model BPTTh syllabus to fit into choice-based credit system.

METHODS

A desk review of all information related curriculum was conducted by using a data abstraction sheet. A model BPTTh syllabus prototype for CBCS was designed based on the national and international guidelines, recommendations of statutory and governing national and international organisations.

RESULTS

Semester based BPTTh syllabus was designed without changing the norms of four- and half-year degree course. All the must-to-know areas of the theory, practical, tutorial, project/dissertation, were considered as "core" areas and the desirable and nice to know areas are left for "electives" by the students. Physiotherapy specific teaching, learning, and evaluative methods are included in the curriculum.

CONCLUSIONS

The existing BPTTh syllabus can be effectively modified based on the national and international guidelines, recommendations of statutory and governing national and international organisations, for choice-based credit system. The proposed model focuses required changes that are needed for adoption of CBCS without neglecting or reducing the weightage of any core subject.

KEY WORDS

BPTTh Syllabus, Physiotherapy Choice Based Credit System, Cumulative Grade Point Average, Physiotherapy Specific Teaching Learning and Evaluative Methods

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BACKGROUND

The growth and development of any profession mainly depends upon its educational curriculum. Physiotherapy curriculum must be designed and periodically revised to ensure the learner to carry out three well-recognized roles of a Physiotherapist (PT); as an educator, a clinician and a researcher.^[1] The entrepreneurship and administration are also considered other qualities need to give attention. It is believed that first priority of education is to prepare people for a well-rounded, balanced life with broad social and cultural interests and as involved, active citizens of our country. The physiotherapy education in India has undergone multitude of changes. Presently in India there are many government- and deemed-universities offering physiotherapy education programs. There is no central government regulatory authority to develop uniform curriculum and monitor the educational institutes offering such programs. There are no fixed guidelines about curriculum duration and content. In India the physiotherapy courses are offered more than last sixty years. Initially only few universities were offering these courses but now currently this program is running in almost all the states by government and deemed universities. At the same point in India we don't have such an autonomous body to regulate educational institutions offering physiotherapy educational programs.

Majority of Indian higher education institutions have been following marks or percentage-based evaluation system, which obstructs the flexibility for the students to study the subjects/courses of their choice and their mobility to different institutions.^[2] There is need to allow the flexibility in education system, so that students depending upon their interests and aims can choose inter- disciplinary, intra-disciplinary and skill-based courses. This can only be possible when choice-based credit system (CBCS), an internationally acknowledged system, is adopted. The choice-based credit system not only offers opportunities and avenues to learn core subjects but also exploring additional avenues of learning beyond the core subjects for holistic development of an individual. The CBCS will undoubtedly facilitate us benchmark our courses with best international academic practices.

There is need to find out current status of physiotherapy curriculum in India. The current status of physiotherapy curriculum will be best analysed when only when it will be compared with national and international organisations guidelines and recommendations such as Drafted version physiotherapy curriculum of Ministry of Health and Family Welfare Government of India, curriculum for entry to practice physical therapy accredited by commission on accreditation of physical therapy education of USA, Australian physiotherapy association (APA) education committee along with Australian council for physiotherapy regulating authorities (ACOPRA) etc.

Educational reforms are required periodically to keep the system upgraded and to suit the need of the hour. The University Grants Commission (UGC) of India is a statutory organization set up by Union government, for the coordination, determination and maintenance of standards of university education. The UGC recommends timely academic reforms for the overall improvement of higher education. One

of such reform is the implementation of Choice Based Credit System (CBCS).^[3] It has been made mandatory in the field of arts, science and engineering.

National Assessment And Accreditation Council (NAAC) Publication of case series named "Best Practices in Curricular Aspects" stated that Reviewing and updating of the curriculum is the essential ingredient of any vibrant academic system.^[4] There must be a dynamic curriculum with necessary additions and changes introduced in it from time to time by the respective university with a prime objective to maintain updated curriculum and also providing their inputs to take care of fast paced development in the knowledge of the subject concerned. Designing of the curriculum to suit the clientele is important. Revising the curriculum should be a continuous process to provide an updated education to the students at large. Fundamental to growth of profession depends upon its level of education. Presently, the World Confederation of Physical Therapy (WCPT) recognizes there is considerable diversity in the social, economic, cultural, and political environments in which physical therapist education is conducted throughout the world.

WCPT recommends physical therapist entry-level educational programs be based on university or university-level studies, of a minimum of four years, independently validated and accredited as being at a standard that accords graduates full statutory and professional recognition. WCPT acknowledges there is innovation and variation in program delivery and in entry- level qualifications, including first university degrees (bachelors), Masters and Doctorate entry qualifications. Strategic Plan of Australian Physical therapy council (2016-2021): In their vision, mission & values document under the goal: Advancement Of Quality Standards stated the objectives of Collaborating on standardized accreditation protocols across the regulated health professions, Completing the review of the assessment of overseas trained physiotherapists and Completing the review of the accreditation standard for entry level physiotherapy programs.

CBCS is a model of education, in which the subjects are divided into core courses and electives. The students can choose the elective courses from subjects of their own choice. This education model also allows the students to learn at their own pace where the assessment is grade based on a credit system. The existing Bachelor of Physiotherapy (BPTh) syllabus in India follows an annual exam pattern. The need for quality in treatment is a critical component of physiotherapy and requires knowledge and understanding of the basic sciences as well as the interaction between the techniques and procedures used in physiotherapy. In an era of greater complexity of technology and techniques, the role of the PT and his/her level of responsibility is continually evolving and expanding. Given the complexity of modern physiotherapy, the recognition of the profession of PT and development of dedicated education programmes specific to that profession must be addressed. Education programmes should provide the PT with the scientific theoretical foundation of the profession and enable them, as practitioners, to be able to synthesize, evaluate and apply their knowledge in a clinical setting.

METHODS

The aim of the study was to design a BPTH syllabus that suits CBCS at the same time without compromising the existing one. The following steps were followed.

All Health Science Universities offering bachelor of physiotherapy courses in Maharashtra will be identified from the UGC website after permission from the institutional Protocol Committee and Ethical committee of Krishna Institute of Medical Sciences "Deemed to be University" Karad. District- Satara, Maharashtra.

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Curriculum which is available online was downloaded. The remaining universities were contacted in writing through emails and by personal telephone contact with the institutions.

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The Curriculum was studied and analyzed in detail. A desk review of these curricula was conducted using a data abstraction sheet. This sheet was validated for content by external physiotherapy experts, with a teaching experience of more than 20 years and Medical education and technology cell convener and members of KIMS "Deemed to be University".

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First Step: The comparison of Current Curriculum for bachelor of physiotherapy courses Course among health science universities offering physiotherapy graduation in India.

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Second Step: The comparison of current Curriculum for bachelor of physiotherapy Course of health science universities offering physiotherapy graduation in India with Drafted version curriculum of Ministry of Health and Family Welfare Government of India.

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Third Step: The comparison of curriculum for Bachelor of Physiotherapy Course from universities of India with curriculum for entry to practice physical therapy accredited by commission on accreditation of physical therapy education of USA, Alliance PT Canada, UK, Australian physiotherapy association (APA) education committee along with Australian council for physiotherapy regulating authorities (ACOPRA) etc.

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Prototype design of BPTH syllabus that suits CBCS, credit points and Physiotherapy specific teaching learning and evaluative methods (Table no. 1 - 5).^[5]

RESULTS

Syllabus Prototype Principles Followed in Calculation

1. Lecture = 1 Educational hour
2. Practical/clinical = 1 Educational hour
3. 15 Educational hours = 1 Credit (15 education hours + 25 Self-studyhours).

4. 3 to 4 credits (can be more for key subjects) = 1 course
5. Grade point = Number grade secured X Credit hours of the course. The designed credit-based semester details of BPTH syllabus are given in [Table 1-8].^[4] as example. Non-credit course activities are not semester bound.

Core Section Sr. No.	Title	Hours			Credits		
	Theory	Practical	Total	Core electives (3 credits each)	Open electives (1 credit each)	Total	
1	Introduction to Healthcare Delivery System in India	60	0	60	National Health Programme	Demography & Vital Statistics	4
2	Basic computers and information Science	10	40	50	Application of Computers in clinical settings	Data entry efficiency	4
3	Communication and soft skills	20	10	30	Basic Language Skills	Business Communication Skills	
4	Medical Terminology and Record keeping (including anatomical terms)	40	0	40	Medical ethics	Professional Indemnity insurance policy	4
5	Medical Law and Ethics	40	0	40	Code of conduct	Medicolegal aspects of clinical practice	4
6	Introduction to Quality and Patient safety (including Basic emergency care and life support skills, Infection prevention and control,)	40	60	100	Quality assurance and management	Biomedical waste management, Disaster management and Antibiotic resistance	4
7	Professionalism and values	20	0	20	Professional & personal values	Cultural issues in the healthcare environment	4
8	Research Methodology and Biostatistics	40	20	60	principles of research and methods applied	Basic Concepts of Biostatistics	4
9	Principals of Management	40	0	40	basic principles of Management	Managing Change and Innovation	4
10	Community orientation and clinical visit	0	100	100	community orientation and clinical visit	governance at village level	4
Table 1. First Semester- Foundation Course							

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Sr. No.	Title	Hours			Credits		
	Theory	Practical	Total	Core Electives	Open Electives	Total	
1	Anatomy	80	100	180	Regional Anatomy	Surface anatomy	4
2	Physiology	60	40	100	Systemic Physiology	Exercise Physiology	4
3	Biochemistry	30	20	50	Macro and Micronutrients	Sports Nutrition	4
4	Biomechanics	60	80	140	basic concepts of human movement	Applied biomechanics	4
5	BPT Directed Clinical Education –part I	0	120			120	
Table 2. Second Semester							

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Sr. No.	Title	Hours			Credits		
		Theory	Practical	Total	Core electives	Open electives	Total
1	Psychology	60	40	100	behavioural patterns of individuals	Clinical Psychology	4
2	Sociology	60	40	100	Social Problems of disabled	Culture and Health:	4
3	Pathology	80	60	140	General Pathology & Systemic pathology	common histopathological, haematological and cytological investigations	4
4	Microbiology	80	60	140	General Microbiology	Principles, uses and demonstration of common sterilization equipment	4
5	BPT Directed Clinical Education – part II (studentship)		100			100	

Table 3. Third Semester

Sr. No.	Title	Hours			Credits		
		Theory	Practical	Total	Core electives	Open electives	Total
1	Fourth Semester Pharmacology	50	50	100	General Pharmacology and systemic Pharmacology principles and effects of various types of exercises	-	4
2	Exercise Therapy	90	100	190	Principles of application Of electrotherapeutic modalities	Yoga	4
3	Electrotherapy	90	100	190		Electro-diagnosis	4
4	BPT Directed Clinical Education – part II (studentship)		100			100	
1	fifth Semester General Medicine	80	60	140	General Medicine	Occupational health	4
2	General Surgery	80	60	140	General Surgery	Post-operative complications	4
3	BPT Directed Clinical Education – part III (studentship)		300			300	
1	Sixth Semester Orthopaedics & Traumatology	100	80	180	Clinical orthopaedics	Orthotics & Prosthetics	4
2	Orthopaedics and Sports Physiotherapy	100	80	180	Sports injury	Surgical implants	4
3	BPT Directed Clinical Education – part IV (studentship)		200	200			

Table 4. Fourth, Fifth and Sixth Semester

Ninth Semester

Internship: minimum 720 hours (calculated based on 8 hours per day, if 90 working days in six-month span). The internship time period provides the students the opportunity to continue to develop confidence and increased skill in simulation and treatment delivery. Non-credit courses (anyone) NSS, RRC, NCC, Sports etc.

Assessment all courses carrying credits should follow some method of assessment to grade the students. Non-credit courses should certify the student performance as

satisfactory/ non- satisfactory. The UGC recommends grade system for final assessment and calculation of cumulative grade point average. The grades and grade points follow the UGC norms as given in the table. Grades and Grade Points 0 (Outstanding):10 (90-100); A+ (Excellent):9 (80-89); A (Very Good): 8 (70-79); B+ (Good) -: 7 (60-69); B (Average): 6 (50-59); F (Fail): 5 (less than 50); Ab (Absent): 0. A student obtaining Grade F shall be considered failed and will be required to reappear in the examination. The calculation of Semester Grade Point Average (SGPA) and Cumulative Grade Point Average (CGPA) are as followed as per UGC recommendation to compute. The SGPA and CGPA shall be rounded off to 2 decimal points and reported in the transcripts.

Sr. No.	Title	Hours			Credits		
		Theory	Practical	Total	Core electives	Open electives	Total
1	Cardiorespiratory and General Physiotherapy	100	80	180	Cardio-pulmonary rehabilitation	Adjunctive therapies in Cardio-pulmonary rehabilitation	4
2	Neurology and Neurosurgery	100	80	180	Neurorehabilitation	Adjunctive therapies in Neurorehabilitation	4
3	BPT Directed Clinical Education – part IV (studentship)		200			200	
1	Eighth Semester Community Medicine	40	20	60	Preventive and social medicine	palliative care	4
2	Neuro Physiotherapy	150	90	240	Conventional and Neuro-physiological Approaches	Assistive and pervasive technology in rehabilitation	4
3	Community Based Rehabilitation	150	90	240	Community Based Rehabilitation	Field project	4
4	BPT Directed Clinical Education – part V (studentship)		200			200	

Table 5. Seventh and Eighth Semester

DISCUSSION

Application of the principles from UGC guidelines and globally accredited physiotherapy governing bodies, the above modifications could be done in BPT syllabus to make it suitable for CBCS. A significant curriculum enrichment gap has been observed in the universities offering physiotherapy courses. The large variation in the quality of services is due to the diverse methodologies opted for healthcare education and the difference in expectations from a graduate after completion of a course and at work. What one is expected 'to perform' at work is assumed to be learned during the course, however, the course design focuses on what one is expected 'to know'. The CBCS thus connects the dots between the 'know what' and 'do how'. The aims of the recommended curriculum are to produce PTs who are Technically and clinically competent; Aware of patient conditions and treatment along with the importance of quality assurance; Understand the theoretical basis for evidence based practice; Effective members of the multidisciplinary team; Prepared to

participate in or initiate research into practice; All aspects of physiotherapy have been considered in the development of this curriculum together with the identification of the roles expected for different levels of physiotherapists based on their qualification and experience. The need for connecting the dots between the education and employment practices has been the road map for devising this curriculum.^[5] The coursework in this article was designed to train students to work in conjunction with physiotherapy team including Medical Physicist (MD physical medicine, orthopaedician, neurologist, cardiologist etc.), Nurses, Dietician, Orthotist and Prosthetist, and other members in the application of physiotherapy treatment protocol. Course work includes anatomy, physiology, electrotherapy, exercise therapy, biomechanics, pharmacology etc.^[6] The student will be skilled in treatment planning, management, administration of physiotherapy treatment and provision of patient support. Employment opportunities can be found in hospitals and nursing homes in both private and public sectors as well as in independent physiotherapy clinics. Bachelor of Physiotherapy (BPT) graduate is encouraged to pursue further qualification to attain senior position in the professional field, also to keep abreast with the advance and new technology, the professional should opt for continuous professional education credits offered by national and international institutes.^[7]

Possibility of learning at their own pace keeps the students in the centre stage of learning and also makes them responsible for their progress. Elite students can be allowed to earn more credits by taking more electives within the same semester which will be reflected in their grade card at the end. Apart from this, students graduating from different institutions face the problem of recognition when going abroad or to a different university within the same country.^[8] Many universities abroad, provide job and higher education opportunity only to students who graduate from few selective Indian Physiotherapy Institutions. So uniformity in physiotherapy curriculum is the need of the hour. This article may prove important reference for curricular enrichment in physiotherapy.

CONCLUSIONS

The existing BPT syllabus can be effectively modified based on the national and international guidelines,

recommendations of statutory and governing national and international organisations, for choice-based credit system. The proposed model focuses on required changes that are needed for adoption of CBCS without neglecting or reducing the weightage of any core subject.

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