

## Original Article

# CONTENTS AND FEATURES OF “SYLLABI” FOR UNDER GRADUATE PHYSIOTHERAPY EDUCATION IN NORTHERN INDIA: A CROSS SECTIONAL STUDY

Nidhi Kalra <sup>\*1</sup>, Sanjeev Gupta <sup>2</sup>, Charvi Vij <sup>3</sup>, Ashu Gupta <sup>4</sup>.

<sup>\*1</sup> Assistant Professor, Banarsidas Chandiwala Institute of Physiotherapy, New Delhi, India.

<sup>2</sup> Director, Banarsidas Chandiwala Institute of Physiotherapy, New Delhi, India.

<sup>\*3</sup> Physiotherapist, MAX Super Speciality Hospital, Pat Pat Ganj, Delhi, India.

<sup>4</sup> Head of Physiotherapy Department, Sports Injuries Centre, Safdarjung Hospital, Delhi, India.

## ABSTRACT

**Introduction:** The syllabus is a description and plan for a course and, if well written, may be a tool that improves student learning, facilitates faculty teaching, improves communications between faculty members about their courses, and assists with monitoring program quality. The level of education for physical therapists should reflect the current and future needs of professional practice and society and changes in physical therapy roles and function as well as changes in the legislation that regulates physical therapy practice. Therefore, through our study, we would assess the existing contents and features of syllabi of various universities conducting Under-graduate Physical Therapy education program in Northern India and throw a light whether they are diverse or in consonance to each other.

**Aim and Objective:** To study the contents and features of various syllabi for Under-graduate Physiotherapy education conducted by various Universities and Institutes of Northern India with special focus on Orthopaedics and relevant subjects.

**Materials and Methods:** There are 24 universities conducting Undergraduate Physiotherapy program in Northern India, 20 universities were found suitable out of which data of 19 universities could be collected. The data was collected by personal visit, from official website of universities, via e-mail and by other sources. The data collected includes course scheme – syllabus, transcript, subject credits and examination scheme

**Results:** The results of this study show that features of syllabi in these universities differ on the basis of total number of academic hours, subject allocation in various years, number of theory and practical hours allotted, percentage weight age of hours, maximum marks, and percentage weight age of marks of each subject.

**Conclusion:** This study concludes that syllabus of the Bachelors of Physiotherapy program in Northern India is variable. The variability is not seen in the program structure rather in: Total number of subjects, Curriculum hours allotted to each subject, Subject allocation in various years, Examination system – annual or semester system, Maximum marks allotted to a subject in the university examination scheme, Total academic hours in a year, Hours allotted for clinical training.

**KEY WORDS:** Physiotherapy Education; Syllabus, Curriculum, Transcript, Examination Scheme.

**Address for correspondence:** Dr. Nidhi Kalra, Assistant Professor, Banarsidas Chandiwala Institute of Physiotherapy, New Delhi, India. **E-Mail:** [nidhisharma@bcip.ac.in](mailto:nidhisharma@bcip.ac.in).

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## INTRODUCTION

According to the Oxford English Dictionary, the word syllabus made its debut in the English language in 1656 in reference to, in essence, a table of contents [1].

The syllabus is a description and plan for a course and, if well written, may be a tool that improves student learning, facilitates faculty teaching, improves communications between faculty members about their courses, and assists with monitoring program quality [2,3].

Syllabus can be summarized in two points- first, include the set program for the course all the information that students need to have the first day of class. Second, provide students with all the information that they need to have in written form. However one can introduce information according to its importance that is in the syllabus, at the moment that such information is introduced [4].

If the instructor uses a syllabus as a communication mechanism to share assignments and grading information with students, that information may not be sufficient if the department wants to conduct curriculum reviews for program development purposes. The departments would need the syllabus to include items such as course goals, objectives and outcomes. Administrators need the syllabi to provide certain information for the integrity of programs and ultimately for accreditation. Meanwhile, students want to first know what they need to have done and by what date as was seen in a study by Becker and Calhoun (1999) [5,6].

The lead instructor for the course and, depending on the college, other recognized bodies (e.g., departments, supervisors, administrative bodies, program review committees, etc) are responsible for developing and maintaining course syllabi [2]. Recent advances in health science and technology has dramatically changed the teaching and learning in the health professional course programs owing to the changes in trends of health seeking behaviour that the prospective professionals would face in their practice [7].

Physical therapy education has followed a process similar to that followed by many other

health care professions. As a profession matures, the level of education is extended in response to practice and societal needs [8].

The professional physical therapist education curriculum has two components: didactic and clinical. The didactic component includes classroom and laboratory experiences involving foundational (biological, physical, and behavioural) sciences, clinical sciences, and physical therapy sciences. The didactic component is designed to provide students with the knowledge, skills, attitudes and behaviour that are needed for entry into the practice of physical therapy clinical education component typically involves experiences in clinical sites away from, and outside the direct control of the academic institution [9].

The professional education is influenced by several factors that would affect the professional outcomes.<sup>7</sup>These factors include changes in socioeconomic conditions; changes in patterns of health care delivery; an expanding scope of practice and relevant knowledge as well as a perceived need for greater depth of knowledge in physical therapy; societal demands for accountability and societal approval of a graduate degree as a symbol of professional status, coupled with the desire of physical therapists to be viewed as professionals [8].

There is increasing concern of morbidity related to lack of physical activity. The physical therapists are increasingly becoming the practitioners' first contact [7]. According to World Council of Physical Therapy guidelines the curricula for physical therapy education should be relevant to the health and social needs of the particular nation. Since the morbid and prevalent conditions are similar in India, a minimum baseline is required, and this should be met in each university conducting undergraduate physical therapy education program. This baseline would serve as an input to the people who are conducting the course and to see the anomalies in the syllabi. Outside India, physical therapy education is regularly evaluated according to established educational standards. In order to cope with the changing trends of the health care needs there is a need for continuous evaluation of the under-graduate

physiotherapy education program and to update with recent advances in health care needs, knowledge base of physical therapy and also with changes in cultural trends [7].

The process of curriculum development and its delivery has to be in consonance with the national policies on education and aims to be achieved through education [10].

The level of education for physical therapists should reflect the current and future needs of professional practice and society and changes in physical therapy roles and function as well as changes in the legislation that regulates physical therapy practice [8].

Therefore, through our study, we would assess the existing contents and features of syllabi of various universities conducting Under-graduate Physical Therapy education program in Northern India and throw a light whether they are diverse or in consonance to each other.

**Need of Study:** The data collected will serve as a valid data base to draw information and related inference pertaining to contents and components of syllabi. This data base can be further applied to form a standard capacity statement of undergraduate physical therapy program. These will help to standardize the procedures of Physical Therapy practice guidelines.

## MATERIALS AND METHODS

There are 24 universities conducting Undergraduate Physiotherapy program in Northern India, 20 universities were found suitable out of which data of 19 universities could be collected.

The data was collected by personal visits, from the official website of universities, via e-mail and other sources (Head of department, faculty, students, and alumni).

The data collected includes course scheme; syllabus, transcript, and examination scheme.

The collected data was categorized as:

- Number and title of subjects.
- Subject allocation in various years.
- Theory and practical subjects and hours.
- University and Non - University Examination Subject.

- Percentage weightage of the academic hours of each subject.

- Maximum marks allotted to each subject in the University examination

- Percentage weightage of maximum marks allotted to each subject in the University examination.

- The total numbers of academic hours in each year of all the universities.

The data was analysed using the software SPSS version-17.0 with the help of a qualified statistician. The mean and Standard deviation of the hours, of the percentage weightage of hours in a year and of the percentage weight age of total marks in the examination scheme were calculated using this software.

## RESULTS AND TABLES

**Table 1:** Type of Universities.

TYPE OF UNIVERSITY	NO. OF UNIVERSITIES
CENTRAL	3
STATE	9
PRIVATE	4
DEEMED	3

Of these 19 universities, 12 universities follow annual system which consists of 4 academic years; 5 universities follow semester system with 2 semesters in each of the 4 academic years and total 8 semesters; one of the university follows semester system in the first academic year and annual system in the 2<sup>nd</sup>, 3<sup>rd</sup> and 4<sup>th</sup> academic year. One university follows a system in which the 4 academic years are divided into 3 Professional years where 1<sup>st</sup> and 2<sup>nd</sup> Professional years are of 1 and half year duration each while 3<sup>rd</sup> year is of 1 year duration. All the 19 universities have a compulsory 6 months of internship after completion of the academic session of 4 years.

The variation has been seen on the basis of total hours in an academic year in the universities which follow the annual system and semester system. [Graph 1 and Graph 2]

The number of hours allotted for clinical Training also presents a variation on the basis of number of hours as well as the in the year in which it starts. Some Universities start clinical training from the 2<sup>nd</sup> academic year while some from the

3<sup>rd</sup> academic year.

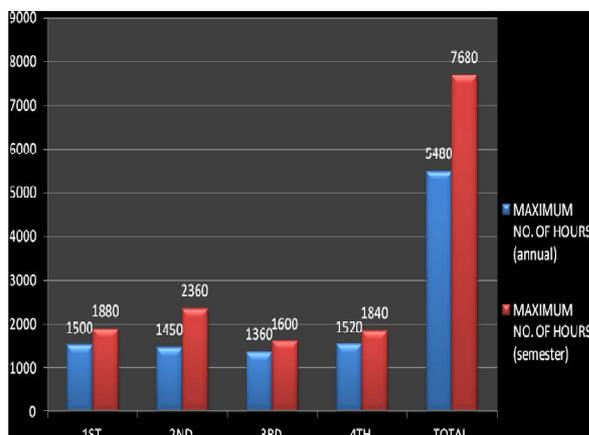
**Table 2:** Variation in hours among the universities following annual system.

BPT YEAR	MAXIMUM NO. OF HOURS	MINIMUM NO. OF HOURS
1ST	1500	895
2ND	1450	750
3RD	1360	730
4TH	1520	760
TOTAL	5480	3325

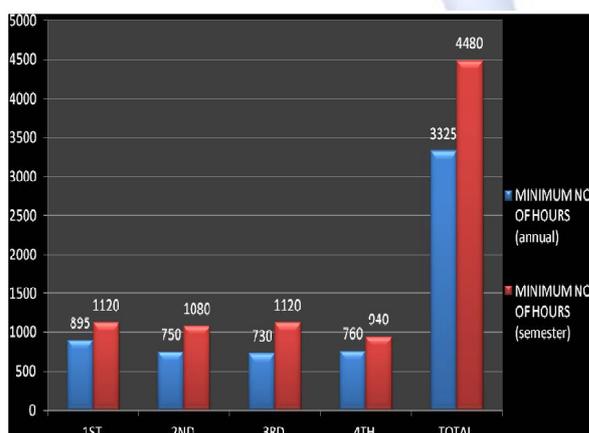
**Table 3:** Showing Variation in hours among the universities following semester system.

BPT YEAR	MAXIMUM NO. OF HOURS	MINIMUM NO. OF HOURS
1ST	1880	1120
2ND	2360	1080
3RD	1600	1120
4TH	1840	940
TOTAL	7680	4480

**Graph 1:** Variation in the Maximum no. of academic hours in the universities following annual and semester system.



**Graph 2:** Variation in the Minimum no. of academic hours in the universities following annual and semester system.



All the subjects were analyzed in this study and their variations were noted. i.e.

**Biomechanics & Kinesiology:** It is a University Examination Subject in all 19 universities in 2<sup>nd</sup> year of 14 universities, 3<sup>rd</sup> year of 4 universities and 1<sup>st</sup> professional year of 1 university. It is a Theory subject in 6 universities and both theory and practical subject in 13 universities. Maximum number of hours is 480 and minimum number of hours is 80. Mean hours are  $187 \pm 99.58\%$ ; mean hours weightage is  $16.02 \pm 5.53\%$ . Mean marks weightage is  $18.75 \pm 6.32\%$ .

**Orthopaedics:** It is a University Examination Subject in 15 universities in 3<sup>rd</sup> year of 13 universities and 2<sup>nd</sup> year of 2 universities. It is a Theory subject in 4 universities and both theory and practical subject in 11 universities. Maximum number of hours is 400 whereas minimum number of hours being 80. Mean hours are  $214.53 \pm 95.21\%$ ; mean hours weightage is  $19.16 \pm 7.58\%$ . Mean marks weightage is  $19.54 \pm 6.19\%$ .

**Physiotherapy in Orthopaedic Conditions:** It is a University Examination Subject in 14 universities in 3<sup>rd</sup> year of 9 universities and 4th year of 5 universities. It is both theory and practical subject in all 14 universities. Maximum number of hours is 440 and minimum number of hours is 128. Mean hours are  $247.71 \pm 103.61$  hours; mean hours weightage is  $23.3 \pm 5.22\%$ . Mean marks weight age is  $22.3 \pm 4.09\%$ .

## DISCUSSION

The results of this study present a snap shot of the current trends in the "Syllabi" of Bachelor's of Physiotherapy program in the universities of Northern India.

Throughout the Northern India, the Bachelor's of Physiotherapy program is of four and half year's duration, where 4 years are academic years and 6 months of Internship.

**First Year:** The subjects in the first year of these universities are Anatomy, Physiology, Biochemistry, Sociology, Fundamentals of Exercise therapy and Fundamentals of Electro therapy along with Hindi, English, Punjabi and Foreign Language being taught in some Universities. All these subjects are University Examination Subjects. A few Non-University

examination subjects like Basic Nursing & First aid, General foundation course are there in a few universities.

**Second Year:** The subjects in the second year of these universities are Pharmacology, Pathology and Microbiology, Electro therapy, Exercise therapy, Biomechanics and Kinesiology, Psychology. All these are University Examination Subjects. Environmental Health Sciences is a Non University Examination subject in a few universities.

**Third Year:** The subjects in third year of these universities are General Medicine, Neurology, Cardiopulmonology, General Surgery, Orthopaedics, Physiotherapy in Orthopaedics, Physiotherapy in General medical and surgical conditions. All these are University Examination Subjects. Other University Examination subjects in a few universities are Physical Diagnosis & Manipulative Skills and Radiology.

**Fourth Year:** The subjects in fourth year of these universities are Physiotherapy in Medical conditions, Physiotherapy in Surgical conditions, Physiotherapy in Orthopaedic conditions, Physiotherapy in Neurological conditions, Physiotherapy in Cardiopulmonary conditions, Physiotherapy in sports conditions, Community based rehabilitation, Rehabilitation Medicine, Organization and Administration & Ethics in Physiotherapy, Research Methodology and Biostatistics. All these are University Examination subjects. Some of the universities have Research Project as a University Examination subject.

Other subjects which show variation on the basis of the year they are being taught are Computer Application, and Communication Skills. They also vary on the basis of being taught as a University Examination subject and Non – university Examination Subject.

The subjects Orthopaedics and Physiotherapy in Orthopaedics show variation in terms of theory and practical hours and examination scheme. Orthopaedics is an individual subject in 15 universities and a combined subject with Sports Medicine in 2 universities, and as a part of Medical and Surgical conditions in 2 universities. There is a variation also seen in terms of whether it is only theory subject or

theory and practical both. Physiotherapy in Orthopaedics is an individual subject in 14 universities and as Physiotherapy in Orthopaedics and Sports conditions in 1 university, and as a part of Physiotherapy in Medical and Surgical conditions in 4 universities. It is allotted both theory and practical hours in all 19 universities.

Clinical Training also shows variation on the basis of number of hours as well as the in the year in which it starts. Some Universities start clinical training from the 2<sup>nd</sup> academic year while some from the 3<sup>rd</sup> academic year.

The results of this study show that features of syllabi in these universities differ on the basis of total number of academic hours, subject allocation in various years, number of theory and practical hours allotted, percentage weightage of hours, maximum marks, and percentage weightage of marks of each subject.

On the basis of the data collected, it was seen that the total number of hours in academic years of universities following semester system is more than that of the universities following annual system, hence there is variation in no. of hours allotted to each subject.

The total number of hours of a subject which has both theory and practical hours are more than that of the university which is offering that subject in only theory hour's format.

The subjects which are incorporated in more than 1 academic years or semesters have greater number of academic hours.

A few subjects who are taught separately in few universities will have more no of academic hours as compared to same subject taught as a part of some other subject.

Languages are also included as subjects in some of the universities because of the fact that the students enrolled in the university come from various language backgrounds or as a requirement for the student to reside in that place for communication purposes in that place.

A diversity exists in the nomenclature of the subjects even though the content remains same.

A variation exists in the course content of all the subjects. There is no standard specification about the hours that should be spent for

different domains of the course content.

Presently there are numerous Government (Central and State), Private and Deemed Universities offering Physiotherapy Education program. Ironically there is no consensus in the curricular design, content, examination scheme, and academic hours. There is no autonomous body to develop uniform curriculum, monitor and accredit the educational institution offering such programs, adding to the diversity in the Physiotherapy education [7].

Like the American Physical Therapy Association Education Committee along with the Commission on Accreditation of Physical Therapy Education (CAPTE) accredits educational institutions offering physical therapy education programs in America and the Australian Physiotherapy Association (APA) education committee along with Australian Council for Physiotherapy Regulating Authorities (ACOPRA) accredits educational institutions offering physical therapy education programs in Australia, we don't have such autonomous bodies to regulate educational institutions offering Physical Therapy education programs in India [7].

There is a need for standardization of curriculum of Physiotherapy education in India.

Hence through this study, it was found that the existing contents and features of syllabi of various universities conducting Under-graduate Physical Therapy education program in Northern India show diversity with each other.

**Limitations of the Study:** Study was restricted only to the Northern India, content of individual subject was not extensively compared and examination scheme of each subject was not exclusively compared.

**Scope for Future Research:** This type of study can be done in other parts of India, extensive research on individual subjects can be done, study can be done on the content of the curriculum, study can be done on the effect of

the content of curriculum Physiotherapy competency and study can be done on the pattern of evaluation.

## CONCLUSION

This study concludes that syllabus of the Bachelors of Physiotherapy Program in Northern India is variable.

The variability is not seen in the program structure rather in: Total number of subjects, curriculum hours allotted to each subject, subject allocation in various years, examination system-annual or semester system, maximum marks allotted to a subject in the university examination scheme, total academic hours in a year and hours allotted for clinical training.

**Conflicts of interest:** None

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