BABA FARID UNIVERSITY OF HEALTH SCIENCES

MINUTES

of the meeting of the

Faculty of Physiotherapy

held on 06.09.2018 at 11:30 am
in the Committee Room
BFUHS, Faridkot

FARIDKOT-151 203

Minutes of the meeting of the Faculty of Physiotherapy held on 06.09.2018 at 11:30 am in the Committee Room, Baba Farid University of Health Sciences, Faridkot

The following members were present in the meeting:

1. Dr. P.N. Gupta, Professor, Department Orthopaedics, Govt. Medical College, Sector 32, Chandigarh-**Dean**
2. Dr. Jitendra Sharma, Principal, DAV Institute of Physiotherapy & Rehabilitation, Jalandhar
3. Dr. Devabrata Kalla, Principal, All Saints Institute of Medical Science & Research, Ludhiana
4. Dr. Anu Brar, Principal, Adesh Institute of Medical Sciences, College of Physiotherapy, AIMS, Muktsar
5. Dr. Sandeep Singh Saini, Principal, College of Physiotherapy, CMC, Ludhiana
6. Dr. Alok Jha, Principal, Dashmesh College of Physiotherapy, Faridkot
7. Dr. Radhe Shyam Garg, Principal, University College of Physiotherapy, Faridkot
8. Dr. Gaurav Thareja, Assistant Professor, All Saints Institute of Medical Science & Resesarch, Ludhiana
9. Dr. Amanpreet Kaur, Assistant Professor, Dasmesh College of Physiotherapy, Faridkot
10. Dr. Rajneet Kaur Sahni, Assistant Professor, All Saints Institute of Medical Science & Research, Ludhiana
11. Dr. Reena Arora, Lecturer, University College of Physiotherapy, Faridkot
12. Sh. O.P. Chaudhary, In-charge (Meeting), Baba Farid University of Health Sciences, Faridkot-**Secretary**

The following members could not attend the meeting:

1. Dr. Suman Bala, Principal, State Institute of Nursing & Paramedical Sciences, Badal (Muktsar)
2. The Principal, Sigma College of Physiotherapy, Ludhiana
3. Dr. Damanjeet Kaur, Lecturer, State Institute of Nursing & Paramedical Sciences, VPO-Badal, Distt.-Muktsar

1. **Dean's welcome address**

At the outset, Dr. P.N. Gupta, Professor, Department Orthopaedics, Govt. Medical College, Sector 32, Chandigarh-Dean he extended welcome to all the Hon'ble Members to attend the meeting. He expressed thanks to Prof. (Dr) Raj Bahadur, Hon'ble Vice-Chancellor for reposing faith in his and appointing as Dean of Faculty of Physiotherapy for the present term. He expressed hope that all the Members would contribute constructively for taking appropriate decision.

2. **Apologies of absence, if any**

The Chairman informed the House that apologies have been received from the following for not being able to attend the meeting:

1 The Principal, College of Physiotherapy, Adesh Institute of Medical Sciences, Bathinda
2 Dr. APS Koachhar, Professor, Dasmesh College of Physiotherapy, Faridkot
3 Dr. Shilpy Jetly, Associate Professor, DAV Insttitute of Physiotherapy & Rehabilitation, Jalandhar
4 Dr. Supriya Khanna, Associate Professor, College of Physiotherapy, CMC, Ludhiana
5 Dr. Rajiv Kumar Kansay, Assistant Professor, Deptt. of Orthopedics, GMC-32, Chandigarh

3. **Adoption of Agenda**

The agenda, as circulated earlier to the members, was adopted for discussion.

4. Considered and **RESOLVED:** To apprise the minutes of the meeting of Board of Studies in Physiotherapy held on 25.01.2018 in the Committee Room, Baba Farid University of Health Sciences, Faridkot.

5. Considered and **RESOLVED:** To approve the Action Taken Report on the decisions made by the Faculty of Physiotherapy in its meeting held on 25.01.2018 in the Committee Room, Baba Farid University of Health Sciences, Faridkot **(Pages 1 to 8 of Appendices).**

While going through the Action Taken Report Para-05

Dr. PN Gupta suggested that Dr. Jitendra Sharma will resubmit the Guidelines for evaluation of Thesis of Master in Physiotherapy on behalf of the Faculty of Physiotherapy till 20th October, 2018 in hard and soft copy to the Controller of Examination. The House further suggested that these Guidelines for evaluation of Thesis of Master in Physiotherapy will be implemented on admission 2018 and uploaded on the University web site.

6. Considered the recommendations made by the Board of Studies in Physiotherapy in its meeting held on 30.07.2018 vide para-6 and **RESOLVED:** To approve the panel of Internal Examiners for the conduct of Bachelor of Physiotherapy (BPT) examinations session May/June, 2018 with amendments and subject to the following conditions **(Pages 9 to 22 of Appendices).**

1. That in case a relative of examiner is appearing, examiners retirement/court case/dispute, etc., the Principal of concerned college(s) will make request to the Controller of Examinations for appointment of internal examiner for BPT/MPT examinations and Controller of Examinations is authorized on behalf of the Board/Faculty to take final decision in this regard after approval of the worthy Vice-Chancellor.
2. The House observed that some colleges have not eligible teacher to become Internal Examiners in various subjects in the list already supplied, the Board taken a serious view of it and suggested that every college should have its own teacher to become Internal Examiner for BPT/MPT.
3. That in case Principal of the concerned College of Physiotherapy writes to the University to appoint alternate Internal Examiner from the College itself the same will be allowed after getting approval from worthy Vice-Chancellor.
4. That in case, at the last moment, a request is received from the Principal for change of Internal Examiner due to non availability of Internal Examiner approved by Faculty of Physiotherapy an alternate Internal Examiner will be appointed by the Controller of Examination, after getting approval from the Competent Authority with a penalty of Rs. 25000 /- for not informing the non-availability of Internal Examiner to the University on or before the meeting of Faculty of Physiotherapy and in such cases TA/DA and other charges to the Internal Examiners will be paid by the concerned college/institute where he/she to be deputed by the University.
5. On receipt of the request for consecutive second time a penalty of Rs.50,000/- per examiner/per session will be imposed on the college concerned.

6. On receipt of the request consecutive third time, a penalty of Rs.1,00,000/- per examiner/per session will be imposed on the College concerned.
7. On receipt of request for fourth time, Centre for conduct of Practical Examiner will be clubbed with another affiliated College to the University.
8. Penalty as decided above will not be applicable upto to November/December, 2018 i.e. 03 (Three) consecutive sessions for the subjects of Anatomy, Physiology, Orthopaedics, General Medicine, General Surgery, Neurology, Paediatrics & Geriatrics subjects since finding teachers is difficult at times. However penalty decided above will be imposed as such so for as these subjects after November/December, 2018.
9. That one examiner will be allowed to conduct examination in maximum three subjects.

7. Considered the recommendations made by the Board of Studies in Physiotherapy in its meeting held on 30.07.2018 vide para-7 and **RESOLVED:** To approve the panel of Internal Examiners for the conduct of Master in Physiotherapy (MPT) examinations session May/June, 2018 and subject to the conditions as mentioned in para-6 above **(Pages 23 to 24 of Appendices).**

8. Considered the recommendations made by the Board of Studies in Physiotherapy in its meeting held on 30.07.2018 vide para-8 for approval of the Plans of Thesis of MPT students of following Physiotherapy College **admitted in session 2017 except the Plan of Thesis of MPT (Neurology) student namely Ms. Vandana Kumari of All Saints Institute of Medical Sciences & Research, Ludhiana since it does not relate to Physiotherapy and as under.** The statement showing the Name of Candidates, Specialty, Proposed Topics of Thesis, Name of Supervisors/Co-Supervisors and One Page Abstract, are available at **(Pages 25 to 43 of Appendices):**

Sr. No.	Name of Colleges	Total No. of Plans	Pages of Appendices	Materials and Methods in One Page Abstract as per Agenda	Recommendations of the Board for approval w.r.t. Materials and Methods in One Page Abstract be read as under instead of as per Agenda
1.	Dasmesh College	03	25-29	Detail of the Student-	

	of Physiotherapy, Faridkot			Sukhjinderpal Singh, MPT (Orthopaedics), Sr. No (3) at page no. 29 as under. Second para under the heading **Methods in One Page Abstract** The hamstring tightness will be assessed by using the active knee extension test in supine lying with fixed at 90^0 flexion	The hamstring tightness will be assessed by using the active knee extension test in supine lying with **hip** fixed at 90^0 flexion
2.	All Saints Institute of Medical Sciences, & Research Ludhiana	04 (Sr. No. 1, 3 to 5)	30-35		
3.	University College of Physiotherapy, Farikot	01	36-37		
4.	DAV Institute of Physiotherapy & Rehabilitation, Jalandhar	04	38-43		

The House noted that as per the decision of Board of Studies in Physiotherapy in its meeting held on 30.07.2018 revised Plan of thesis with respect to **Ms. Vandana Kumari, a student of MPT (Neurology) course** at **Sr. No. 02** was submitted during the meeting by the Principal, All Saints Institute of Medical Sciences, & Research Ludhiana at **(Pages 48 to 49 of Appendices).**

The House further noted that the Principal, Dasmesh College of Physiotherapy, Faridkot was submitted revised Plan of thesis with respect to Sukhjinderpal Singh, a MPT (Orthopaedics) student Sr. No (3) during the meeting in the view of observation of Board **(Pages 50 to 51 of Appendices).**

After discussion it was **RESOLVED:** To approve the Plans of Thesis of MPT students of following Physiotherapy College **admitted in session 2017 except the Plan of Thesis of MPT (Neurology) student namely Ms. Vandana Kumari of All Saints Institute of Medical Sciences & Research, Ludhiana since it does not relate to Physiotherapy and as under.** The statement showing the Name of Candidates, Specialty, Proposed Topics of Thesis, Name of Supervisors/Co-Supervisors and One Page Abstract, are available at **(Pages 25 to 43 of Appendices):**

Sr. No.	Name of Colleges	Total No. of Plans	Pages of Appendices	One Page Abstract as per Agenda at page no. 29	Approved by Faculty instead of as per Agenda
1.	Dasmesh College of Physiotherapy, Faridkot	03	25-29	Detail of the Student-Sukhjinderpal Singh, MPT (Orthopaedics), Sr. No (3) at page no. 29 as under.	Revised **One Page Abstract** with respect to Sukhjinderpal Singh, a MPT (Orthopaedics) student Sr. No (3) **(Pages 50 to 51 of Appendices):**
Sr. No.	**Name of Colleges**	**Total No. of Plans**	**Pages of Appendices**	**Recommendations of the Board as per Agenda**	**Approved by Faculty instead of as per Agenda**
2.	All Saints Institute of Medical Sciences, & Research Ludhiana	04 (Sr. No. 1, 3 to 5)	33	Detail of the Student-Gurpreet Kaur, MPT (Neurology), Sr. No. 03 One Page Abstract as per Agenda	The Faculty suggested that the sample size is to be revised to 150 from 90 subjects instead of as per One Page Abstract in Agenda.
3.			35	Detail of the Student-Nimisha (Cardio-Pulmonary) 05 Title	The Faculty observed that the abbreviation should not be used in title/topic of PG Course and after discussion it was **RESOLVED**: To approve the title of plan of thesis as under: "Comparison of Proprioceptive Neuromuscular Facilitation and Core Conditioning Techniques on Chest Expansion and Peak Expiratory Flow Rate in Geriatric Individuals "

4.				Considered revised Plan of thesis with respect to **Ms. Vandana Kumari, a student of MPT ( ) course** at **Sr. No. 02** submitted during the meeting **But not accepted**	**The Faculty observed that still revised plan needs to be some modifications and suggestion of the House was noted down** by Dr. Rajneet Kaur Sahni, Assistant Professor, All Saints Institute of Medical Science & Research, Ludhiana (Supervisor of **Vandana Kumari) and after discussion it was RESOLVED:** To constitute a following Committee to consider the plan of thesis of **Vandana Kumari to be submitted to said the committee within 30 days by circulation/email and committee will submit its report/recommendations to Dean for final approval on behalf of the Faculty:** 1. Dr. Jitendra Sharma Principal, DAV Institute of Physiotherapy & Rehabilitation, Jalandhar 2. Dr. Sandeep Singh Saini Principal, College of Physiotherapy, CMC, Ludhiana 3. Dr. Jaspreet Singh Vij, Associate Professor, University College of Physiotherapy, Faridkot
5.	University College of Physiotherapy, Farikot	01	36-37	-	-
6.	DAV Institute of Physiotherapy & Rehabilitation, Jalandhar	04	38-43	-	-

9. Considered the recommendations made by the Board of Studies in Physiotherapy in its meeting held on 30.07.2018 vide para-9 and **RESOLVED:** To recommend to the Academic Council for approval of the following qualification and experience of internal examiners for the subjects of Anatomy, Physiology and Clinical subjects of BPT examinations as under. The recommendations are within the prerogative of the various authorities of the University i.e Board of Studies/Faculty/Academic Council/Board and no approval is required from any Central Council/body(s)(**(Pages 44 to 45 of Appendices)**:

1. Individuals with degree of MS Anatomy and MD Physiology shall become the internal examiner for Anatomy and Physiology respectively, where and when available.

2. In case of the unavailability of the above mentioned examiners, following individuals can be considered for becoming the internal examiner-(optional):

   I. That in the subject of Anatomy and Physiology of BPT examinations, a faculty member having three years teaching experience after M.Sc.
   II. Medical Anatomy and Medical Physiology respectively will be considered as eligible to become Internal examiner.
   III. MS (General Surgery) for subject of Anatomy & MD (General Medicine) for subject of Physiology
   IV. A faculty Member having Ph.D. in concerned subject will be considered eligible for appointment as Internal Examiner.

3. A Faculty member having DNB in concerned subjects with two year experience in clinical specialties i.e. Orthopaedics, Medicine, Surgery, Neurology, Paediatrics etc. will be considered eligible for appointment as Internal Examiner in respective subjects.

10. Considered the recommendations made by the Board of Studies in Physiotherapy in its meeting held on 30.07.2018 vide para-10 and **RESOLVED:** To approve the mandatory visit of BPT 1st year students to Pushpa Gujral Science City, Kapurthala as under **(Pages 44 to 45 of Appendices)**:

    It is advised to leave this matter on the Principal and management of each institute. It is also recommended that not to link internal assessment of students upon this.

    Also considered and **RESOLVED:** That in this regard letter be written by the College Branch to all the Principals of physiotherapy colleges.

11. Considered the Ordinances and Syllabus of BPT Course received from the Principal, DAV Institute of Physiotherapy & Rehabilitation, Jalandhar by Email dated 04.04.2018 **(Page 46 to 47 of Appendices- Ordinances and Syllabus Placed Separately & to be sent by e-mail only).**

Note: The House noted that as under:

1. That the Board of Studies in Physiotherapy in its meeting held on 30.07.2018 vide para-11 that all the Principals of Physiotherapy colleges after consultation with the Faculty members of his/her colleges will recommend the suggestions/comments, if any after consultation, by e-mail within 10 (Ten) days from the date of meeting of BOS Physiotherapy held on 30.07.2018 regarding the matter to Dr. Jitendra Sharma and Jitendra Sharma will finalize the Syllabus and Ordinances of the BPT course and he will submit the same to the Controller of Examinations for consideration by the Faculty of Physiotherapy.
2. It is further submitted that the Letter No. Accounts/Physio/AC/254 dated 11.08.2018 has been received from Dr. Jitendra Sharma, Principal, DAV, Institute of Physiotherapy & Rehabilitation vide which he has informed that no comments/suggestions from any teacher or Physiotherapy College is received yet by himself in this regard.

After some discussion it was further **RESOLVED:** That following Principals will get inputs from concerned faculty/subject experts and finalize the Syllabus and Ordinances of the BPT course:

Sr. No.	Principals	Allotment of subjects of the Year of BPT Course
1	1.University College of Physiotherapy, Faridkot 2.Dashmesh College of Physiotherapy, Faridkot	1st year
2	1. College of Physiotherapy, CMC, Ludhiana 2. All Saints Institute of Medical Science & Research, Ludhiana	2nd & 4th Year
3	1. DAV Institute of Physiotherapy & Rehabilitation, Jalandhar 2. Concerned Faculty PIMS, Jalandhar	3rd year

It was further **RESOLVED:** That after finalizing the Syllabus concerned Principals will forward the same by e-mail in hard and soft copy within 30 days from the dispatch of minutes of this meeting to Dr. Jitendra Sharma and Dr. Jitendra Sharma is authorized on behalf of the faculty of for compilation of Syllabus and Ordinances of the BPT course and he will submit the same to the Dean for consideration.

With the permission of Chair:

10. Considered and **RESOLVED:** To approve the **I^st Six monthly Progress Report** submitted by **Mr. Satish Sharma** (Part -Time) Ph. D. candidate in the subject of Physiotherapy at D.A.V., Institute of Physiotherapy & Rehabilitation, Jalandhar on Thesis topic entitle **"Effect of Vibration Stimulus on Spasticity, Balance and Gait in Post Stroke Hemiplegic Patients" (Page 52 to 70 of Appendices).**

11. Considered the Letter No. COP/CMC/060/018 dated 28.08.2018 received from Principal, Christian Medical College and Hospital, College of Physiotherapy, Ludhiana matter regarding Payment of Internal Examiners (for Practical and for the invigilator for theory May/June, 2018 **(Page 71 of Appendices).**

Dr. Sandeep Singh Saini apprised the House that the Internal Examiners for the subject of Physiotherapy (Medical and Clinical Faculty) has requested many times to give us remuneration for being a internal examiner because their other faculty members who are internal examiners for Medical and Allied Health examinations are getting their respective dues from the concerned colleges. Furthermore, He also requested to Controller of Examination to permit us to pay remuneration for the invigilators (for the University theory papers) & for the other supporting staff, because they all are doing their duties perfectly for smooth conduction of University examinations, as every college has to accommodate more than 300 students per session in the centre (as allotted by the University). He also requested to release some fund for refreshments which includes (tea and snacks) for the centre superintendent, invigilators, clerks, attendants and security personnel and also for stationary.

After discussion it was **RESOLVED:** To recommend the matter to the Controller of Examinations for approval.

12. Dr. PN Gupta, Dean drew the attention of the members on page no 44 (3) regarding revision of Panel of External Examiner and after discussion it was **RESOLVED:** That Principals of all the Physiotherapy Colleges after consultation with faculty of his/her college will recommend name of eligible teachers as per norms for appointment as External Examiners within the 30 days from the dispatch of the minutes of this meeting to Dr. Sandeep Singh Saini, Principal, College of Physiotherapy, CMC, Ludhiana and Dr. Sandeep Singh Saini, Principal, College of Physiotherapy, CMC, Ludhiana is authorized on behalf of the Faculty of Physiotherapy to finalize the panel of External Examiner for submission to the Controller of Examinations.

The meeting ended with a vote of thanks to the Chair

Dr. P.N. Gupta Dean	Sh. O.P. Chaudhary Secretary

Please refer the other Annexure/Appendices from Agenda

List of Internal Examiners for the conduct of BPT Examinations to be held in May/June, 2018

BPT 1st Year

Sr. No.	College	Anatomy	Physiology	Exercise Therapy I	Electrotherapy I	Computer Application
1	DAV Institute of Physiotherapy & Rehabilitation, Jalandhar	Consent obtained from Dr. Sherry Sharma , Associate Professor. Age -39 MBBS, MS (Anatomy) Total Experience : 8 years and 6 months From PIMS	consent obtained from Dr. Avjot Kaur Miglant Professor , Age -39 MBBS, MD (Physiology) Total Experience : 14 Years and 6 months From PIMS	Dr. Ram Babu Associate Professor. Age: 40 Years Qualification: BPT, MSPT Total Experience : 16 years , Experience in The Present Post 10 years 8 Months. Dr. Yash Partap Associate Professor. Age: 35 Years Qualification: B,PT, MPT-Ortho Total Experience : 4 years 6 months Experience in The Present Post: 4 years 6 months	Dr. Avnee Sarin, Assistant professor. Age: 28 Years Qualification: MPT-Orthopedics Total Experience: 3 years 6 month Experience in The Present Post: 3 years 6 month Dr. Jaspinder Kaur Assistant Professor. Age: 29 Years qualification: MPT Neurology Total Experience: 4 years 4 months Experience in The Present Post : 4 years 4 months	Mr. Anuj, Computer Instructor, M.Sc. Computer

Sr. No.	College	Anatomy	Physiology	Exercise Therapy I	Electrotherapy I	Computer Application
2	College of Physiotherapy, Adesh Institute Medical Sciences, Muktsar	Dr. Monika Gupta, MD (Anatomy) Assistant Prof. (AIMSR, Bathinda), Exp 06 years 6 months	Dr. Harpreet Kaur, MD (Physiology) Assistant Prof. (AIMSR, Bathinda), Exp 06 years 6 months	Dr. Anu Brar, MPT (Ortho), Professor, Exp. 12 years	Dr. Manpreet Kaur, MPT(Sports) Assistant. Prof. Exp 04 Years 6 months	Mrs. Amrinder Kaur, (MCA) Assistant. Prof. Exp.11 years
3	All Saints Institute of Medical Sciences & Research, Ludhiana	Dr. Manish Badhwar, Asstt. Prof., Age 34 yrs, M.Sc.(Anatomy), Total Experience 2 years	From CMC as per consent	Dr. Vijaya Kumar D, Professor, Age-42 Yrs, MPT (Ortho), Total Experince 16 Yrs	Dr. Devabrata Kalla,,Professor MPT (Ortho), Age- 39 Yrs, Total Exp- 11 Years	Mr. Barjinder Kumar Aneja, Asstt. Professor, Age- 41 yrs, M.Sc. (IT), Total Exp. 8 Years
4	College of Physiotherapy, Adesh Institute Medical Sciences, Bathinda	No exam	No exam	No exam	No exam	No exam
5	College of Physiotherapy, CMC, Ludhiana	Dr. Neeru Goyal, Ph.D (Anatomy), 11yrs	Dr. Samuel Surjit Singh Assistant Professor, Age,43 MBBS,MD Physiology Experience after PG 7 Years 6 months	Dr. Amarjot Singh (MPT) Ex'therapy 4 yrs, Asst. Prof	Dr. Sandeep Singh Saini, Professor/ Principal Age 37 yrs MPT (Ortho) Orthopaedics Experience after PG 12	Mr. P. Satish, System Manager Age 43 years B.Com. Hon, MCA/ Computer , Experience after PG 10 year +

			Dr. Joydeep Singh., Prof., 18 yrs , MD Physiology		years 3 months	
Sr. No.	**College**	**Anatomy**	**Physiology**	**Exercise Therapy I**	**Electrotherapy I**	**Computer Application**
6	University College of Physiotherapy, Faridkot	Dr. Priti Chaudhary, Professor MS (Anatomy), Age 44 yrs, Exp. 10 yrs	Dr. Sonia, Assoc. Prof., MD (Physiology), Age 38 yrs, Exp. 12 yrs	Dr. Reena Arora, Lect., MPT, Age 37 yrs, Exp. 12.5 years	Dr. Smati Sambyal , Lect., MPT, Age 35 yrs, Exp. 8.5 years	Mr.Sarabjit Singh Computer Programmer, M.Sc. Age-40 yrs, Exp-10 yrs.
7	State Institute of Nursing & Para Medical Sciences, Badal (Muktsar)	Same as UCOP, Faridkot	Same as UCOP, Faridkot	Mrs. Deepti Batra, Lect., Age 34 yrs, MPT (Musculoskeletal Disorder) passing 2008, Exp 09 yrs	Mrs. Deepti Batra, Lect., Age 34 yrs, MPT (Musculoskeletal Disorder) passing 2008, Exp 09 yrs	Same as UCOP, Faridkot
8	Dasmesh College of Physiotherapy, Fairdkot	Mrs. Vaishali, Sr. Lecturer DOB-21.11.1989 M.Sc(ANT.) Experience after PG. 5 Years	Dr. Ruchita Vasudeva, Professor, DOB-6.7.1972, MD, Experience after PG 10 Year	Dr. Amanpreet Kaur, Asst. Prof. DOB-13.2.1987 MPT (Ortho) Experience after PG 3.6 years	Dr. Priyanka Vij, Associate Professor, Date of Birth-20.10.1984, MPT (Cardio), Experience after PG 6.5 years	Mr. Preetinder Pal Singh, Lecturer. Date of Birth-10.9.1986, MSc I.T, Experience after PG 5.5 years
9	Sigma College of Physiotherapy & Hospital	Students of Sigma College of Physotherapy should be/May be clubbed with College of Physiotherapy, CMC, Ludhiana		Mr. Tushar Arora, Asst.Prof., Age 30 yrs, MPT (Orthopaedics) Exp after Passing MPT 04 yrs 11months	Students of Sigma College of Physotherapy should be/May be clubbed with College of Physiotherapy, CMC, Ludhiana	

BPT 2nd Year

Sr. No.	College	Exercise Therapy-II	Electrotherapy-II	Biomechanics
1	DAV Institute of Physiotherapy & Rehabilitation, Jalandhar	Dr. Yash Partap, Associate Professor. Age: 35 Years Qualification: BPT, MPT – Ortho, Total Experience; 4 years,6 month Experience in The Present Post : 7 years Dr. Ram Babu, Associate professor. Age 40 Years Qualification : BPT, MSPT , Total Experience : 16 years , Experience in The present Post ; 10 years 8 Months.	Dr. Jaspinder Kaur, Assistant Professor. Age : 29 Years , Qualification : MPT Neurology , Total Experience ; 4 years 4 months Experience in The present Post: 4 years 4 months Dr. Avnee Sarin, Assistant Professor. Age: 28 Years Qualification: MPT-Orthopedics Total Experience : 3 years 6 month Experience in The Present Post: 3 years 6 month	Dr. Jitendra Sharma, Professor , Age: 44 Years , Qualification: BPT, MSPT , Total Experience : 17 years , Experience in The Present post: 7 years 9 Months . Dr. Shilpy Jetly , Associate professor, Age : 39 years , BPT, MSPT Total Experience : 15 years 9 month Experience in The present Post : 7 years 9 month
2	College of Physiotherapy, Adesh Institute Medical Sciences, Muktsar	Dr. Manpreet Kaur , MPT(Sports) Assistant. Prof . Exp: 04 years 6 months	Dr. Ambar Dabra, MPT (Neuro), Assistant Prof. Exp. 04 years 6 months	Dr. Jaspreet Kaur, MPT (Cardio), Assistant prof. Exp. 05 Years
3	All Saints Institute of Medical Sciences & Research, Ludhiana	Dr. Vijaya Kumar D , Professor, MPT (Ortho), Age-42 yrs, Total Exp-16 years	Dr. Devabrata Kalla, Professor, Age – 39 Yrs, MPT (Ortho), Total Experience 11 years	Dr. Gaurav Thareja,MPT, Assoc. Professor., Age 33 Yrs, MPT (Ortho), Total Experience 9 Years

Sr. No.	**College**	**Exercise Therapy-II**	**Electrotherapy-II**	**Biomechanics**
4	College of Physiotherapy, Adesh Institute Medical Sciences, Bathinda	No Examination	No Examination	No Examination
5	College of Physiotherapy, CMC, Ludhiana	Dr. Amarjot Singh Gill Assistant professor, Age -29 MPT (Neuro) Neurology Experience after PG 3 years	Dr. Supriya Khanna Associate Professor Age -32 MPT (Ortho) Orthopaedic Experience after PG 7 years 8 months	Dr. Mullai S., Professor., MPT(Sports) Sport Age-39 yrs Experience after PG 10 years, 11 months
6	University College of Physiotherapy, Faridkot	Dr. Jaspreet Singh Vij, Assoc. Professor., Ph.D.(Physiotherapy) Age 37 yrs, Exp. 12 .5 Years.	Dr. Jaspreet Singh Vij, Assoc. Professor., Ph.D.(Physiotherapy) Age 37 yrs, Exp. 12.5 Years	Dr. Sandeep Kumar , Lect., MPT, Age 36 yrs, Exp. 9.5 years
7	State Institute of Nursing & Para Medical Sciences, Badal (Muktsar)	Ms. Navneet Kaur Aulakh, Lect., Age 35 Years, MPT (Musculoskeletal Disorders), Year of Passing MPT:-2008 Exp. in present post 9 yrs	Mrs. Deepti Batra, Lect., Age 34 yrs, MPT (Musculoskeletal Disorder) passing 2008, Exp 09 yrs	Same as UCOP, Faridkot
8	Dasmesh College of Physiotherapy, Fairdkot	Dr. Priyanka Vij, Assoc. Professor, Date of Birth-20.10.1984, MPT (Cardio), Experience after PG 6.5 Years	Dr. Alok Jha, Professor, Date of Birth-01.01.1980, MPT (Ortho), Experience after PG 10 .5 years	Dr. Amanpreet Kaur Asst. Prof. Date of Birth 13.2.1987 MPT(Ortho) Experience after PG 3.6 years

BPT 3rd Year

Sr. No.	College	Orthopaedics	General Medicine	PT in Orthopaedics	PT in Medical Conditions I
1	DAV Institute of Physiotherapy & Rehabilitation, Jalandhar	Dr. Pramod Mahender, Lecturer, 37 years, MBBS, MS(Orthopedics), Total Exp 7 years, Experience in the present post 3 years Dr. Tanveer, Designation; Lecturer, 31 years, MBBS, MS(Orthopedics), DNB (Orthopedics), Experience in the present post 3 years	Dr Nitin Gupta , Designation; Lect., Age- 47 yrs., MBBS, MD, Experience in The Present Post: 17 years 5 months Dr. Raghu Sabharwal , Assistant Professor, Age : 27 years MPT Medicine , Total Experience : 3 years Experience in The Present Post : 3 years	Dr. Yash Partap, Associate Professor. Age: 34 Years Qualification: BPT, MPT – Ortho, Total Experience; 4 years, 6 month Experience in The Present Post : 7 month Dr. Avnee Sarin, Designation; Assistant professor. Age: 27 Years Qualification: MPT-Orthopedics Total Experience 3 years, Experience in The Present Post: 3 years	Dr. (Mrs.) Shilpy Jetly, Designation; Associate Prof., Age-39 yrs., BPT, MSPT, Total Experience : 15 years 9 months Experience in The Present Post : 7 years 7 month Dr. Ram Babu, Associate Professor. Age: 40 Years, Qualification: BPT, MSPT, Total Experience : 16 years , Experience in The present Post: 10 years 8 Months.
2	College of Physiotherapy, Adesh Institute Medical Sciences, Muktsar	Dr. Opinder Singh Virk, Ms (Ortho) Assistant Prof. Exp. 03 years 6 months	Dr. Pritam Singh Sandhu,MD (Medicine) Professor. Exp . 38 years 06 months	Dr. Anu Brar , MPT (Ortho), Assistant Prof., Exp. 12 years	Dr. Jaspreet Kaur, MPT (Cardio), Assistant Prof. Exp.

			Dr. Hemant Gopal , MD (medicine) Associate prof. Exp. 10 years 06 months		05 years
3	All Saints Institute of Medical Sciences & Research, Ludhiana	Dr. Rohit Chabbra,,Lecturer, MS (Ortho.), Age- 40 yrs,Total Experience 8 Years	Dr. Barinderpal Singh Ahuja,Lecturer,Age- 42Yrs., MD (Medicine), Exp in present post 3 Years	Dr. Gaurav Thareja, MPT, Assoc. Professor, Age 33 years, MPT (Ortho), Total Exp- 9 Years	Dr. Rajneet Kaur Sahni, Associate prof. , Age-33 Yrs, MPT (Neuro), Total Experience 7 Years
Sr. No.	**College**	**Orthopaedics**	**General Medicine**	**PT in Orthopaedics**	**PT in Medical Conditions I**
4	College of Physiotherapy, Adesh Institute Medical Sciences, Bathinda	No Exam	No Exam	No Exam	No Exam
5	College of Physiotherapy, CMC, Ludhiana	Dr. Abhishek Samuel , Assistant Professor Age-40 MS (Ortho) Orthopaedics Experience after PG 9Years 6 months	Dr. Navjot Singh, Professor., MBBS, MD Gen. Medicine, Age 44 yrs, Experience after PG 14 years 6 months	Dr. Supriya Khanna Associate Professor Age -32 MPT (Ortho) Orthopaedic Experience after PG 7 years 8 months	Dr. Mullai S. , Professor 39 yrs , MPT (Sports) Sport Experience after PG 10 years 6 months
6	University College of Physiotherapy, Faridkot	Dr.Anshul Dahuja, Assistant Professor, MS(Ortho), Age 35 yrs Exp. 5.5 yrs	Dr. Shaminder Kaur, Associate Professor,MD (Med), Age -35 yrs Exp 06 years	Dr. Sandeep Kumar , Lecturer, MPT, Age-36 yrs, Exp. 9.5 yrs	Dr. Smati Sambyal, Lect., MPT, Age-35 yrs, Exp. 8.5 yrs

Sr. No.	College	Orthopaedics	General Medicine	PT in Orthopaedics	PT in Medical Conditions I
7	State Institute of Nursing & Para Medical Sciences, Badal (Muktsar)	Same as UCOP, Faridkot	Same as UCOP, Faridkot	Dr. Navneet Kaur Aulakh, Lecturer , Age 35 Years , MPT (Musculoskeletal Disorders), Year of Passing MPT:- 2008 Exp. in present post 9 yrs	Same as UCOP, Faridkot
8	Dasmesh College of Physiotherapy, Fairdkot	Dr. APS Kochhar Professor Date of birth 3.7.1957 MS Ortho, Exp after PG 15 Years	Dr. Raj Bahadur Gill, Assistant Porfessor, MD Medicine, No Experience	Dr. Alok Jha, Professor , MPT (Ortho) Date of Birth-01.01.1980, Experience after PG 10.5 years	Dr. Pushpdeep Singh, Asst . Professor, MPT(Ortho), Date of Birth-27.12.1985, Experience after PG 4.5 Years

BPT 4th Year (Old)

Sr. No.	College	G. Surgery	Neurology	Paed. & Geriatrics	PT Med. Conditions II	PT in Surgical Conditions	Computer Applications
1	DAV Institute of Physiotherapy & Rehabilitation, Jalandhar	Dr. Vikas Gupta, Qualification;MBBS, MS (Surgery), Experience in the present post 1 year Dr. Anil Virdi MBBS.MS(Surgery), Exp 17 years (clinical) Dr. Vandana Sabharwal , Qualification: MBBS, Diploma in OBS & Gynae Experience : 20 Years	Dr. Nitin Gupta, Assistant Professor , Age: 50 Years, Qualification: MBBS, MD, Experience in The Present post:20 years 6 months Dr. H R Garg, Lect., Age- 66 yrs., Qualification; MBBS, MD, Total Experience ; 22 years (clinical) 7 years (teaching)	Dr. Nitin Gupta, Assistant Professor , Age: 50 Years, Qualification: MBBS, MD, Experience in The Present post:20 years 6 months Dr. Raghu Sabharwal , Qualification: BBBS, MD (Medicine) Experience : 23 years	Dr. Jaspinder Kaur Assistant Professor. Age: 29 Years qualification: MPT Neurology Total Experience: 3 years 10 months Experience in The Present Post : 4 years 4 months Dr Manika Saxena , Assistant Professor , Age: 31 years BPT, MPT (Neurology) Total $xperience ; 3 years Experience in The Present post : 7 months.	Dr. Shilpy Jetly , Associate Professor, Age: 39 years , Qualification : BPT, MSPT, Total Experience : 15 years 9 months , Experience in The Present Post : 7 years 9 month Dr. Jitendra Sharma, Professor, Age: 44 Years , Qualification: BPT, MSPT, Total Experience : 17 years , Experience in the present post: 7 years 9 month	Mr. Anuj, Computer Instructor, M.Sc. Computer
2	College of Physiotherapy, Adesh Institute Medical Sciences, uktsar	No Exam	No Exam	No Exam	No Exam	No Exam	No Exam
3	All Saints Institute of						

	Medical Sciences & Research, Ludhiana	No Exam	No Exam	No Exam	No Exam	No Exam	No Exam
Sr. No.	**College**	**G. Surgery**	**Neurology**	**Paed. & Geriatrics**	**PT Med. Conditions II**	**PT in Surgical Conditions**	**Computer Applications**
4	College of Physiotherapy, Adesh Institute Medical Sciences, Bathinda	No Exam	No Exam	No Exam	Dr. Kavita Kaushal Prof, MSPT, MPT (Neuro) , Age-43 yrs, Exp. 17 Yrs	No Exam	No Exam
5	College of Physiotherapy, CMC, Ludhiana	No Exam	No Exam	No Exam	No Exam	No Exam	No Exam
6	University College of Physiotherapy, Faridkot	No Exam	No Exam	----------	No Exam	No Exam	No Exam
7	State Institute of Nursing & Para Medical Sciences, Badal (Muktsar)	No Exam	No Exam	No Exam	No Exam	No Exam	No Exam
8	Dasmesh College of Physiotherapy, Fairdkot	No Exam	No Exam	No Exam	No Exam	No Exam	No Exam

BPT 4th Year (New)

Sr. No.	College	G. Surgery	Neurology	PT in Neurological Conditions	PT in Surgical Conditions	Physiotherapy Ethics, Administration and Rehabilitation
1	DAV Institute of Physiotherapy & Rehabilitation, Jalandhar	Dr. Vikas Gupta, Qualification;MBBS , MS (Surgery), Experience in the present post 1 year Dr. Anil Virdi MBBS.MS(Surgery), Exp 17 years (clinical) Dr. Vandana Sabharwal , Qualification: MBBS, Diploma in OBS & Gynae Experience : 20 Years	Dr. Nitin Gupta, Assistant Professor , Age: 50 Years, Qualification: MBBS, MD, Experience in The Present post:20 years 05 months Dr. H R Garg, Lect., Age- 66 yrs., Qualification; MBBS, MD, Experience in The Present Post : 22 years	Dr. Jaspinder Kaur, Assistant Professor. Age: 29 Years , Qualification: MPT Neurology, Total Experience : 4 years 4 months , Experience in The Present Post: 3 years 10 months. Dr. Manika Saxana , Assistant professor, Age : 31 Years BPT, MPT (Neurology) Total Experience : 3 years Experience in The present Post : 7 months	Dr. Shilpy Jetly , Associate Professor, Age: 39 years , Qualification : BPT, MSPT, Total Experience : 15 years 9 months , Experience in The Present Post : 7 years 9 month Dr. Jitendra Sharma, Professor , Age: 44 Years Qualification: BPT, MSPT , Total Experience : 17 years , Experience in the present post : 7 years 9 Month	Dr. Jitendra Sharma, Professor, Age: 44 Years , Qualification: BPT, MSPT, Total Experience : 17years 6 months , Experience in the present post: 7 years 9 month

Sr. No.	College	G. Surgery	Neurology	PT in Neurological Conditions	PT in Surgical Conditions	Physiotherapy Ethics, Administration and Rehabilitation
2	College of Physiotherapy, Adesh Institute Medical Sciences, Muktsar	Dr. Nikhil Mahajan, MS (Surgery) Assistant prof. Exp. 06 years	Dr. Pritam Singh Sandhu, MD(Medicine) professor. Exp. 38 years 6 months Dr. Hemant Gopal , MD (medicine) Associate prof. Exp. 10 years 06 months	Dr. Ambar Dabra, MPT (Neuro) Assistant Prof.., Exp 04 years 6 months	Dr. Ambar Dabra, MPT (Neuro) Assistant Prof.., Exp 04 years 6 months	Dr. Anu Brar, MPT (Ortho), Professor., Exp. 12 years
3	All Saints Institute of Medical Sciences & Research, Ludhiana	Dr. Arvindpal Singh Gambhir, Lacturer,, Age-57 Yrs, MS (Surgery) Exp in present post 3 Years.	Dr. Barinderpal Singh Ahuja, Lecturer, Age-42 Yrs, MD (Medicine), Exp in present post 3 Years	Dr. Rajneet Kaur Sahni Associate Prof., Age-33 Yrs, MPT (Neuro), Total Experience 7 Years	Dr.Gaurav Thareja, Assoc. Professor, Age-33 Yrs, MPT (Ortho), Total Experience 9 Years	Dr.Vijaya Kumar D, Professor , Age-42 Yrs, MPT(Ortho), Total Experince 16 Yrs
4	College of Physiotherapy, Adesh Institute Medical Sciences, Bathinda	No Exam	No Exam	Dr. Kavita Kaushal Prof, MSPT, MPT (Neuro) , Age-43 yrs, Exp. 17 Yrs	No Exam	No Exam

Sr. No.	College	G. Surgery	Neurology	PT in Neurological Conditions	PT in Surgical Conditions	Physiotherapy Ethics, Administration and Rehabilitation
5	College of Physiotherapy, CMC, Ludhiana	Dr. Amit Mahajan ,Associate Professor, Age- 41 yrs MBBS, MS General Surgery & Vascular Surgery Experience after PG 12 years 6 months	Dr. Navjot Singh, Professor, MBBS,MD Gen. Medicine Age 44 yrs, Experience after PG 14 years 6 months	Dr. Dorcas B.C Gandhi , Associate Professor, Age-31 yrs MPT (Neurology) Neurology, Experience after PG 5 years	Dr. Supriya Khanna, Associate Professor., MPT(Ortho), Orthopaedics Age 32 years , Experience after PG 7 years 8 months	Dr.Amarjot Singh Gill Assistant professor, Age -29 MPT (Neuro) Neurology Experience after PG 3 years
6	University College of Physiotherapy, Faridkot	Dr Nitin Nagpal, Professor., MS(Surg), Age-37 yrs, Exp. 10 yrs	Dr. Sulena, Assist. Prof., DM (Neurology), Exp-9 yrs. Dr. Shaminder Kaur, Associate Professor, Exp. 06 years, From GGS, FDK	Dr. Jaspreet Singh Vij, Assoc. Professor., Ph.D.(Physiotherapy) Age 37 yrs, Exp. 12.5 years	Dr. Smati Sambyal, Lect., MPT, Age-35 yrs, Exp. 8.5 yrs	Dr. Sandeep Kumar , Lect., MPT, Age 36 yrs, Exp. 9.5 yrs
7	State Institute of Nursing & Para Medical Sciences, Badal (Muktsar)	Same as UCOP, Faridkot	Same as UCOP, Faridkot	Same as UCOP, Faridkot	Ms. Navneet Kaur Aulakh , Lecturer , Age-35years , M.P.T.(Musculoskeletal Disorders) Year of	Same as UCOP, Faridkot

					Passing MPT: 2008 Experience (in present post) 9 Years	
Sr. No.	**College**	**G. Surgery**	**Neurology**	**PT in Neurological Conditions**	**PT in Surgical Conditions**	**Physiotherapy Ethics, Administration and Rehabilitation**
8	Dasmesh College of Physiotherapy, Fairdkot	Same as UCOP, Farikot	Dr. Raj Bahadur Gill, Assistant Porfessor, MD Medicine, No Experience	Dr.Amanpreet Kaur Asst. Prof. Date of Birth 13.2.1987, MPT(Ortho) Experience after PG 3 .5 Years	Dr.Priyanka Vij, Associate Professor, MPT(Cardio), Date of Birth-20.10.1984, Experience after PG 6 .5 Years	Dr. Alok Jha, Professor, MPT (Ortho) Date of Birth-01.01.1980, Experience after PG 10.5 Year

List of Internal Examiners for the conduct of various professional MPT Examinations to be held in May/June, 2018

MPT 2nd Year

Sr. No.	College	Sports	Orthopaedics	Paediatrics	Neurology	Cardiology
1	DAV Institute of Physiotherapy & Rehabilitation, Jalandhar	Dr. Jitendra Sharma , Professor , Age : 44 years ,Qualification: BPT, MSPT , Total Experience: 17 years , Experience in The Present Post : 7 years 9 Months	Dr. Yash Partap, Associate Professor. Age: 34 Years Qualification: BPT, MPT – Ortho. Total Experience: 4 years, 6 months Experience in The Present Post : 7 months	----------	No Exam	----------
2	University College of Physiotherapy, Faridkot	No exam	Dr Sandeep Kumar, Lect., MPT, Age-36 yrs, Exp.8 yrs	No Exam	Dr. Jaspreet Singh Vij, Assoc. Professor., Ph.D.(Physiotherapy) Age 37 yrs, Exp. 12.5 years	No exam

Sr. No.	College	Sports	Orthopaedics	Paediatrics	Neurology	Cardiology
3	All Saints Institute of Medical Sciences & Research, Ludhiana	No Exam	Dr. Devabrata Kalla, Professor, Age-39 Yrs, MPT(Ortho), Total Experience 11 Years	No Exam	Dr. Rajneet Kaur Sahni , Associate Prof.,Age-33 Yrs, MPT(Neuro), Total Experience 7 Years	No Exam
4	Dasmesh College of Physiotherapy, Fairdkot	NO EXAM	Dr. Alok Jha, Professor, MPT (Ortho) Date of Birth-01.01.1980, Experience after PG 10.5 Year	----------	----------	NO EXAM

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ALL SAINTS INSTITUTE OF MEDICAL SCIENCES & RESEARCH
(Affiliated to Baba Farid University of Health Sciences, Faridkot)
SOUTHERN CANAL BY-PASS, V.P.O. JASPAL BANGAR, LUDHIANA - 141122
Phone : 0091-161-2813540, 0091-98142-17300 Fax : 0091-161-2813340
E-mail : allsaintsludhiana@gmail.com Website : www.allsaintsedu.com

Ref. No. 515/18 -48- Dated 30/08/2018

To,
The Controller of Examinations,
Baba Farid University of Health Sciences,
Faridkot

Subject: Revised Plan of Dissertations for Approval Ms. Vandana Kumari (MPT Student Admitted in 2017)

Sir,

With reference to the minutes of Board of Studies meeting held on 30/7/2018 at Baba Farid University of Health Sciences, Faridkot, we are hereby submitting the Revised Plan of Dissertation along with Abstract and Soft Copy (CD) for our Master of Physiotherapy (M.P.T.) student Ms Vandana Kumari (session 2017-18), as discussed during the Board of Studies meeting for inclusion in the table agenda of upcoming Faculty of Physiotherapy meeting scheduled on 06-09-2018 and further for the university approval.

S N	Research Student	Specialty	Revised Topic of Dissertation	Research Supervisor	Co-Supervisor
1	Vandana Kumari	MPT-Neurology	Comparison of Motor and Cognitive Performance of Educated Mothers with and without Cerebral Palsy Children	Dr. Rajneet Kaur Sahni	Dr. Sunanda Choudhary

Thanking you.

Yours truly,

ALL SAINTS INSTITUTE OF MEDICAL SCIENCES AND RESEARCH
Principal

(Principal)

Ex-3087 6/9/18

Enclosures: Abstract (1), Revised Plan of Dissertation (1), CDs (1)

Ref No. 515/18

ABSTRACT

Comparison of Motor and Cognitive Performance of Educated Mothers with and without Cerebral Palsy Children

Research Student: Vandana Kumari MPT (Neurology), All Saints Institute of Medical Sciences and Research, Ludhiana

Research Supervisor: Dr. Rajneet Kaur Sahni MPT (Neurology), Associate Professor, All Saints Institute of Medical Sciences and Research, Ludhiana

Co Supervisor: Dr. Sunanda Choudhary MPT (Neurology), Associate Professor, All Saints Institute of Medical Sciences and Research, Ludhiana

Introduction: The care giving is a normal function being the parent of young child. However this role takes up new form when the child is experiencing some impairment that is functional in nature. The physical and psychological health of the parents, especially the mother, as the principal person responsible for the care, is influenced by the behavior and needs of children. Motor performance refers to a temporary status of motor behavior, for example assessed during a motor practice session. Cognition is act for process of knowing including both awareness and judgment. It is a process by which an organism become knowledgeable. It is influenced by basic education qualification, personality characteristics, emotional factors and subjectivity.

Objectives: The main objective of this study is to compare motor and cognitive performance between educated mothers with and without cerebral palsy children.

Methods: Based on the Inclusion and Exclusion criteria 100 mothers with basic education qualification will be enrolled for the study by random sampling. The subjects will be divided into 2 groups A and B of 50 each. Group A will be mothers with cerebral palsy children. Group B will be mothers without cerebral palsy children. Motor performance test will be measured by static balance, Dynamic balance (forward and backward tandem walking), Figure of 8 and Rhythmic coordination test. Cognition will be measured by Stroop test and Digit Symbol Substitution Test.

Statistical Analysis: Descriptive statistics, Unpaired 't' test.

Keywords: Cerebral palsy; motor performance; cognitive performance.

Vandana Kumari
(Research Student)

(Principal)

Rajneet Sahni
(Research Supervisor)

-50-

To,

The Controller of Examinations

BFUHS,

Faridkot.

Sub - Re submission of plan of Dissertation of Mr. Sukhjindipal Singh (MPT student admitted in 2017)

Sir, with reference to the minutes of Board of Studies meting held on 30/7/2018 at BFUHS, Faridkot, we, hereby submit the amended Dissertation along with Abstract of our MPT student Mr. Sukhjindipal Singh (session 2017-2018). It was a typing error which was rectified.

Dr Alok Ora

Principal,

Rasmeh College of Physiotherapy, Faridkot

Date - 06/09/18

ABSTRACT

TITLE: Muscle Energy Technique Vs Static Stretching in Hamstring Tightness Among Sprinters

Research Student: Sukhjinder Pal Singh, MPT (Orthopaedics) 1st Year Dasmesh College of Physiotherapy, Faridkot

Research Supervisor: Dr. Alok Jha, MPT (Orthopaedics), Professor, Dasmesh College of Physiotherapy, Faridkot

INTRODUCTION

When examining the critical factors that contribute to high level athletic performance, flexibility is one of the key items. It has been hypothesized that improving an athlete's flexibility may allow them to be more successful in their chosen athletic endeavour. The hamstring muscle group is a frequent focus of flexibility training due to the number of injuries that occur to this muscle group in the midst of athletic activities. Hamstring pathologies are the most prevalent muscle injury in sports involving rapid acceleration and sprinting.

AIM OF STUDY

- To assess the effect of muscle energy technique (post-isometric relaxation) on hamstring extensibility.
- To compare the effects of muscle energy technique and static stretching on muscle hamstring extensibility.

MATERIALS AND METHODS

60 Sprinters in the age group of 15 to 25 years (involved including in the study on basis of inclusion Criteria & Exclusion Criteria and divided into three groups).

The hamstring tightness will be assessed by using the active knee extension test in supine lying with hip fixed at 90^0 flexion. The knee extension angle will be recorded with the help of Universal Goniometer.

The runing time for 200m sprint and stride length will be measured before the treatment (pre-test readings). The subjects will be divided in three groups Group-A (20 subjects), Group B (20 subjects) and Group C (20 subjects). Group A will be given MET, group B will be given Static stretching and group C will be control group. (only Warm up and cool Down exercises.) Result will be analyzed by using SPSS 16. KEYWORDS: Muscle Energy Technique, Stretching

Submitted By:
Sukhjinder Pal Singh
MPT (Orthopaedics)
1st Year
Dasmesh College of Physiotherapy
Faridkot

Guided By:
Dr. Alok Jha, MPT (Ortho)
Professor
Dasmesh College of Physiotherapy
Faridkot

Principal
Dr. Alok Jha, MPT (Ortho)
Dasmesh College of Physiotherapy
Faridkot

6/12/15

-52-

Sub:-Forwarding 1st six monthly progress report of **Mr. Satish Sharma** (a part time candidate) for the subject of Ph.D **Physiotherapy** under faculty of Physiotherapy.

Principal, D.A.V. Institute of Physiotherapy & Rehabilitation, Jalandhar has forwarded 1st six monthly report submitted by above said candidate on thesis topic entitle **"Effect of Vibration Stimulus on Spasticity, Balance and Gait in Post Stroke Hemiplegic Patients"**

Orders are solicited to put the report in original in the forthcoming meeting of Faculty Medical Sciences.

Submitted for orders please.

DEO

10/8/18

Asst.(Exam)

AR(E) 13/8/18

J COE 13/8/18.

COE 13/8/18

Page-1 to 18

Exam 10133 16/8/18

6/9/18

D.A.V. INSTITUTE OF PHYSIOTHERAPY & REHABILITATION

(Affiliated to Baba Farid University of Health Sciences, Faridkot)

Mahatma Hans Raj Marg, G.T. Road, Jalandhar-144 008 (Pb.) INDIA

Phone : 0181-2208021, 2209228, Fax : 0181-2208021

BFUHS/OS/227 Dated:27-07-2018

The Controller of Examination,
Baba Farid University of Health Sciences,
Sadiq Road,
Faridkot-151203

Subject: - **Progress report of Mr.Satish Sharma Ph.D candidate.**

Your ref: letter no 07-BFUHS/Ex/PHD/18/7950 dated 27/6/18

Sir,

Please find enclosed herewith progress report of Mr.Satish Sharma Ph.D. candidate registered at our Institute.

Yours truly,

Dr. Jitendra Sharma
Principal

Exam- 2960
2/8/18

30/7/18

DEO (PhD)
2/8/18

BABA FARID UNIVERSITY OF HEALTH SCIENCES, FARIDKOT

Faculty of Physiotherapy Sciences

Doctor of Philosophy (Ph.D.) Degree

Half-yearly Progress Report Performa
(June/December)

1. Period ending — June - 2018

2. Name of the candidate (in block letters) — SATISH SHARMA

3. Degree for which registered — Ph.D (PHYSIOTHERAPY)

4. Topic (as approved and shown in the registration letter issued by the University) — EFFECT OF VIBRATION STIMULUS ON SPASTICITY, BALANCE AND GAIT IN POST STROKE HEMIPLEGIC PATIENTS

5. Name of the Department/s and of the Institution where the candidate is working — G.M.C.H. SECTOR-32 CHANDIGARH

6. Name/s of the supervisor/s

Name DR. JITENDRA SHARMA
Designation PRINCIPAL
Institution D.A.V. INSTITUTE OF PHYSIOTHERAPY, JALANDHAR.

Name DR. SUDHIR GARG
Designation PROF. & HEAD, ORTHOPAEDICS DEPT
Institution G.M.C.H., SECTOR-32 CHANDIGARH

7. Particulars of registration letter with letter No. and date etc — 07-BFUHS/Ex/PHD/3962 11/04/2018

8. Expected date of submission of Ph.D. thesis (month/year) — JUNE - 2022

9. Research papers published, if any, during the period under report(give complete reference)

Transcutaneous electrical nerve stimulation and laser Therapy in the management of temporomandibular joint disorders

10. Any other publication during the period under report

Compare the effectiveness between ultrasound therapy and laser therapy in the managment of temporomandibular joint disorders.

11. Teaching work done (a broad outline only) during the period under report (at undergraduate/postgraduate level)

Taught and took lectures and seminars of interns posted in GHQH - 32 Chanakyapuri.

12. Invited guest lectures delivered, if any, during the period under report

Nil

13. Field work for research project done

Nil

14. Conference/Seminar/Workshop etc attended during the period under report

Advanced Electrotherapy, Shockwave Therapy & Decompression Therapy organised on May 13th 2018 by Chattanooga

15. Any other academic activity undertaken, apart from reported above

Nil

16. Detailed report of the work done during the period under report

attach separate sheets carrying a detailed a detailed report

17. Signature of the candidate

Satish Sharma

PROGRESS REPORT

1. Ph.D. Registration
Faculty of Physiotherapy Sciences
Baba Farid University of Health Sciences
Faridkot.

2. Period and number of Progress Report — June/December, 2014 ✓
No. 1/2/3/4/5/6/7/8/..04...(June-2018)

3. Name and Address of research scholar
Name..Satish Sharma.....
Address..H. No...130.....
..Sector-22A, Near Nehru Park
...Chandigarh - 160022.....

4. Topic of the research project as approved by the Faculty of Physiotherapy Sciences
Effect of Vibration Stimulus on Spasticity, Balance and Gait in Post stroke Hemiplegic patien

5. Department through which registered (Physiotherapy) DAV Institute of Physiotherapy & Rehabilita Jalandh

6. Name of the Institute
D.A.V. Institute of Physiotherapy & Rehabilitation, Jalandhar Punjab

7. Supervisor/s

Co-supervisor
Name Dr. Sudhir Garg
Designation Prof. & Head
Department Orthopaedics, GMCH-32 Chan

Supervisor
Name Dr. Jitendra Sharma
Designation Principal
Department Dept. of Physiotherapy & Rehabili DAV Institute of Physiotherapy Rehabilitation, Jalandhar

Signature of the candidate ...Satish Sharma...

(5)

Ph.D. Registration

Faculty of Physiotherapy Sciences
Baba Farid University of Health Sciences
Faridkot

PROGRESS REPORT

Period June - 2018
No. 01

A DETAILED PROGRESS REPORT FOR THE PERIOD UNDER REPORT

- report may be of one page or more than that
- every page of the progress report should be signed by the candidate
- the progress report, at the end, should also be authenticated by signatures of the supervisor

18. Brief comments of supervisor/
Co-supervisor

The research work has been done under my supervision in GMCH Chandigarh as per the plans and the progress is satisfactory

Signature of Co-Supervisor
(with office stamp)

Dr. Sudhir Kumar Garg
Prof. & Head, Deptt. of Orthopaedics
Govt. Medical College & Hospital
Sector 32, Chandigarh-160030

Signature of Supervisor
(with office stamp)

Principal
D.A.V. Institute of Physiotherapy &
Rehabilitation Jalandhar City

19. Remarks by the Head of Department

The research work has been done Satisfactorily.

D.A.V. INSTITUTE OF PHYSIOTHERAPY & REHABILITATION * JALANDHAR * ओ३म्

Signature of HOD
(with office stamp)

20. Remarks by the Chairman, RDC/Principal

The research work has been done satisfactorily and the first progress report (June 2018) may please be accepted

Signature, Chairman RDC/Principal
(with office stamp)

Principal
D.A.V. Institute of Physiotherapy &
Rehabilitation Jalandhar City

DETAIL REPORT

(7)

To

The Controller of Examinations

Baba Farid University of Health Sciences

Faridkot, Punjab.

-59-

Subject: Submission of I^st Report of Ph.D work Progress.

Sir,

This is to bring to your kind notice that I have collected a data for 13 subjects i.e. 07 in Group 'B' and 06 in Group 'A'. I have gone through the literature and collected 36 references supporting my research work. I have published 02 articles/papers in International journal and attended 01 CM. during this period.

Kindly accept my progress report for June 2018. Thanking you in anticipation.

Yours Truely

Satish Sharma

(SATISH SHARMA)

Dr Jitendra Sharma

(Supervisor)

GROUP-B

Subject	Gender	Age	Affected Lower Limb	MAS	Step Length PRE(Cms.)		Stride Length PRE(Cms.)		Cadence PRE	GV PRE (m/min.)	BOS PRE(Cms.)	TUG PRE	SLS PRE	
				Pre	UA	A	UA	A					UA	A
1	F	60	R	2	26	30	52	60	68	20	12	19	20	12
2	F	59	L	2	27	31	54	62	70	22	12	17	16	10
3	F	46	R	2	30	34	60	64	72	24	10	16	30	18
4	M	63	R	1+	24	26	48	52	69	24	11	18	14	10
5	M	47	R	2	25	26	50	52	84	18	10	17	24	22
6	F	59	L	1	25	30	50	60	66	16	09	15	22	06
7	M	66	R	2	27	31	54	62	68	16	10	18	12	03

Subject	Gender	Age	Affected Lower Limb	MAS	Step Length Post(Cms.)		Stride Length Post(Cms.)		Cadence Post	GV Post (m/min.)	BOS Post(Cms.)	TUG Post	SLS Post	
				Post	UA	A	UA	A					UA	A
1	F	60	R	2	26	30	52	60	68	20	12	19	20	12
2	F	59	L	1+	28	31	56	62	72	22	12	17	16	10
3	F	46	R	2	30	35	60	71	72	24	10	17	30	18
4	M	63	R	1	24	26	48	52	69	24	11	18	14	10
5	M	47	R	1+	25	27	50	55	83	18	10	16	24	21
6	F	59	L	1	26	31	52	62	66	16	08	15	22	06
7	M	66	R	2	28	30	56	60	69	16	09	18	12	03

MAS: Modified Ashworths Scale

GV: Gait Velocity

BOS: Base of Support

TUG: Timed Up and Go Test

SLS: Single Leg Stance

UA: Unaffected

A: Affected

GROUP-A

Subject	Gender	Age	Affected Lower Limb	MAS	Step Length PRE(Cms.)		Stride Length PRE(Cms.)		Cadence PRE	GV PRE(m/min.)	BOS PRE(Cms .)	TUG PRE	SLS PRE	
				Pre	UA	A	UA	A					UA	A
1	M	52	R	2	25	30	50	60	70	20	10	18	29	18
2	M	60	R	2	24	31	48	62	71	18	08	19	22	09
3	F	67	R	2	29	32	58	64	66	22	11	17	26	16
4	M	68	L	1+	28	33	56	66	68	22	10	18	28	22
5	F	48	R	2	26	34	52	68	75	20	12	14	30	20
6	F	51	R	2	28	35	56	70	80	18	09	16	27	20

MAS: Modified Ashworths Scale

Subject	Gender	Age	Affected Lower Limb	MAS	Step Length Post(Cms.)		Stride Length Post(Cms.)		Cadence Post	GV Post (m/min.)	BOS Post (Cms.)	TUG Post	SLS Post	
				Post	UA	A	UA	A					UA	A
1	M	52	R	2	28	31	56	62	70	20	09	17	29	20
2	M	60	R	1+	28	31	56	62	72	18	08	16	22	10
3	F	67	R	1	30	33	60	66	68	22	10	15	26	16
4	M	68	L	1+	31	34	62	68	69	22	10	16	28	24
5	F	48	R	1	26	36	52	72	78	20	10	14	30	20
6	F	51	R	1	29	35	58	70	82	18	09	15	27	20

GV: Gait Velocity

BOS: Base of Support

TUG: Timed Up and Go Test

SLS: Single Leg Stance

UA: Unaffected

A: Affected

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Transcutaneous electrical nerve stimulation and laser therapy in the management of temporomandibular joint disorders

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Abstract
Pain relief and reestablishment of normal jaw function are the main goals of conservative management of Temporomandibular Disorders (TMD). Transcutaneous electrical nerve stimulation (TENS) and laser therapy are part of these modalities, although little is known about their real efficacy in controlled studies. This research compared these two treatments in a sample of 18 patients with chronic TMD of muscular origin, divided into two groups (LASER and TENS). Treatment consisted of ten sessions, in a period of 30 days. Active range of motion (AROM), visual analogue scale (VAS) of pain and muscle (masseter and anterior temporalis) palpation were used for follow-up analysis. Data were analyzed by Friedman test and ANOVA for repeated measurements. Results showed decrease in pain and increase in AROM for both groups ($p<0.05$), and improvement in muscle tenderness for the LASER group. Authors concluded that both therapies are effective as part of TMD management and a cumulative effect may be responsible for the improvement. Caution is suggested when analyzing these results because of the self-limiting feature of musculoskeletal conditions like TMD.

Keywords: temporomandibular joint disorders, physical therapy

Introduction

Temporomandibular Disorders (TMD) comprise a number of signs and symptoms affecting the masticatory muscles, Temporomandibular Joint (TMJ), or both23. Even though they have been subject of study for a long time, many controversies still remain regarding their etiology, diagnosis, and treatment. TMD etiology is currently known to be multifactorial, including the presence of parafunctional habits, trauma, stress, and emotional, systemic, hereditary, and occlusal factors. Nevertheless, none of these factors has demonstrated to overcome the others.

Based on the multifactorial etiology of such problems, the treatment usually involves more than one modality in order to maximize any complementary effects, including counseling, drug therapy and physical therapy.

In this context, physical therapy aims to a) increase the awareness of the patient about the cause of the symptoms; b) achieve muscle relaxation; c) reduce muscular hyperactivity and reestablish muscle and joint movement; d) relieve pain, spasm, and edema; and e) allow for recovering of normal function. Among such treatments, acupuncture, exercises, massages, thermal therapy, electric stimulation (TENS), ultrasound, and low level laser have been used.

Some of these methods were already evaluated and contradictory outcomes were observed regarding treatment effectiveness in TMD.

TENS is regularly employed in patients with TMD29, in view of its analgesic and muscle relaxing effect, with positive results12, Bassanta, Sprosser and Paiva2, in 1997, conducted TENS therapy in 26 patients presenting signs of myofascial dysfunction, limited mouth opening and pain or tenderness in the temporalis and masseter muscles bilaterally. Through electromyographic and eletrognathographic analysis, the authors concluded that the treatment promoted muscle relaxation and reduced the pain sensation.

There are many papers reporting the use of LLLT (low level laser therapy) for improvement of symptomatology of TMD patients20. In 1988, Bezuur, Habets, Hansson4 observed total pain relief in 80% of arthrogenic patients (TMJ) after delivery of LLLT for a mean period of 6 days. Hansson16, in 1989, reported a fast decrease in intra-articular inflammation in TMJ of five patients after application of infrared laser. In 1989, Hatano17 observed positive effects of laser radiation for reduction of the patient's responses to palpation with an 830nm device, but this study did not include a control group. On the other hand, Hanssen, Thoroe15(1990), carried out a double-blind study to evaluate the effectiveness of an invisible infrared laser diode (904nm) for therapy of orofacial pain and no significant differences were found for the VAS between the control and experimental groups. Gam, Thorsen, Lonnberg10, in 1993, observed the effect of low level laser therapy in a meta-analysis and concluded that such treatment is not effective for musculoskeletal disorders. Conti6, in 1997, evaluated the efficacy of low level laser therapy in patients with TMD by means of a double-blind design and the outcomes did not demonstrate significant differences between

the real and placebo groups.
The literature demonstrates the importance of physical therapy in the treatment of Temporomandibular Disorders8. Therefore, the aim of this study was to compare the effectiveness of Transcutaneous eletric nerve stimulation (TENS) and low-level laser therapy for the treatment of patients with chronic myogenic TMD.

Methods
Although a total of 20 subjects were initially included, two abandoned the study for different reasons. Final sample was composed of 18 individuals (with a mean age of 25.6 years) attending the TMD and Orofacial Pain Center of the Department of Prosthodontics of I.T.S Paramedical College, Ghaziabad (Table 1). Patients presenting with more than 5 posterior missing teeth (except for third molars) or other occlusal risk factors for TMD were excluded. Patients were randomly selected and proportionally divided into two groups, namely LASER group and TENS group. Before three days and during the course of this study, patients were asked not to take analgesic drugs, or have other form of therapy, including palliative home care, counseling or muscle exercises. The entire sample was informed about the objectives of the study and after all procedures had been explained, an informed consent was signed.
Inclusion was performed after anamnesis and detailed physical examination, including muscle and TMJ palpation, evaluation of the mandibular movements and joint sounds. Individuals presenting signs and symptoms of pain on the masticatory muscles (temporal and masseter) were included. Subjects with muscle tenderness caused by systemic diseases, dental-related pain, or patients with psychological disturbances were also excluded, as well as those with any restriction for the employment of electrical therapy.

Procedure
A low level laser device with wavelength of 830 to 904nm was used at an output of 4J/cm² and power of 100mW (VR-kc-610 SOFT LASER – Dentoflex, São Paulo –SP, Brazil). For the transcutaneous electric stimulation (TENS), the selected device was the Myomonitor BNS-40 (Myotronics, Seattle, USA), which emits a low level electric pulse rhythmically every 1.5 sec, together with surface electrodes Myo-trodes II (Myotronics, Seattle, USA).
The application techniques followed the manufacturers' instructions. The LASER group was submitted to the low level laser therapy with "scanning" movements instead of touching the skin directly over the painful area. This technique was suggested by the manufacturer and allows for treating not only a limited painful spot, but the entire painful area by means of this "scanning" motion.
The period of application for this group was 9 minutes for each side of the face.
The TENS group received the same number of sessions as the LASER group, comprising 10 sessions, 3 times a week, during 4 weeks.
The total time of application of this therapy was 40 minutes, excluding the first 5 minutes.
Evaluation was performed immediately before and 5 minutes after each therapeutic session by means of the visual analogue scale (VAS), mandibular active range of motion (AROM) and palpation of the masticatory muscles.
The VAS is carried out through a horizontal line measuring 100mm, containing the text "no pain" at the left end and "the worst possible pain" at the right end, on which the patient marks, through a vertical line, the position that better indicates the degree of perceived pain at that moment. Such measurement constitutes a parameter for subjective follow-up of the evolution of symptoms.
Muscle palpation was performed bilaterally, with firm yet gentle and constant pressure of approximately 1500 grams, as described by Conti, *et al.* [7].
Thus, on the basis of the reactions demonstrated by individuals, the degree of pain under palpation was rated as 0 – no pain; 1 – mild pain; 2 – moderate pain; 3 – severe pain.
The evaluated muscles were the masseter and the anterior portion of the temporalis muscle.

Data analysis
The Friedman test for intragroup analysis and the 3-way ANOVA for repeated measurements evaluated possible differences between groups (TENS X LASER), between before and after each session (immediate effect) and between sessions. Differences below 5% ($p<0.05$) were considered statistically significant.

Results
Evaluation of the Visual Analogue Scale (VAS)
Initial VAS for the LASER group was 66.1mm and final VAS of 7.8mm ($p<0.001$). For the TENS group, initial VAS was 57.2mm and final VAS was 4.4mm ($p<0.019$).
Treatment evolution can be seen in Figure 1, where a general improvement before and after each session can be observed. Besides, it is noticed that the posterior session begins with a milder pain the anterior session.
The outcomes of the VAS highlighted that there was no statistically significant difference between groups ($p=0.527$), and the immediate effect was also not significant ($p=0.266$). On the other hand, the effect between sessions (within group analysis) was statistically significant ($p=0.048$).

Active range of motion (AROM)
Figure 2 shows the significant improvement in maximum opening (initial mean of 42.5mm, being 43mm for the LASER group and 42mm for the TENS group, and final mean of 47.4mm, being 47.6mm and 47.2mm for the LASER and TENS groups, respectively.
The ANOVA demonstrated that there was no statistically significant difference between groups, including the immediate effect ($p=0.860$ and $p=0.091$, respectively). However, a significance difference between sessions was found ($p<0.001$).

Muscle palpation
Statistical analysis (Friedman test) revealed no statistically significant difference regarding pain relief for the anterior temporalis muscle between groups (LASER and TENS) or between right or left sides (Table 2).
Figures 3 and 4 demonstrate alternation between pain improvement and worsening for the temporalis muscles at the

right and left sides, with no evident evolution.

There was no statistically significant difference regarding pain decrease of the masseter muscle for both right and left sides (p=0.312 and p=0.097, respectively) for the TENS group. However, for the LASER group there was a statistically significant difference for both sides (right and left), yielding p<0.001, respectively. Data can be observed in Table 3. Figures 5 and 6 demonstrate variation of the pain condition for the masseter muscles at the right and left sides.

Table 1: Demographic data for each evaluated group

Group	Laser	Tens
Gender	8 female and 1 male	8 female and 1 male
Age (min – max)	25.8 years (25-40)	25.4 years (25-40)
Pain duration (min-max)	8 months (6-24)	10 months (8-24)

Table1: showing demographical data

This table 2 Statistical outcomes for muscle palpation of the left and right temporalis muscles for each evaluated group

Table 2: shows the muscle palpation of right and left temporalis muscle

Group	Right side	Left side
Laser	p= 0.237	p= 0.607
Tens	p= 0.187	p=0.094

This table 3 Statistical outcomes for muscle palpation of the left and right masseter muscle for each evaluated group

Table 3: shows the muscle palpation of right and left masseter muscle

Group	Right side	Left side
Laser	p=0.017	p= 0.003
Tens	p= 0.311	p= 0.097

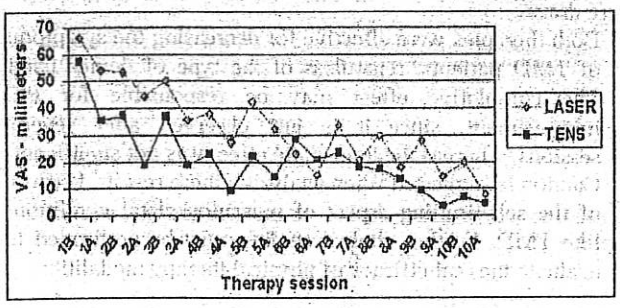

Fig 1: Visual analogue scale in millimeters for each evaluated group, before (B) and after (A) each therapeutic session

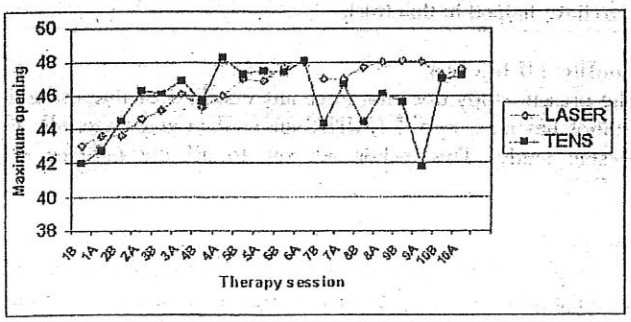

Fig 2: Mean maximum opening in millimeters for each evaluated group, before (B) and after (A) each therapeutic session

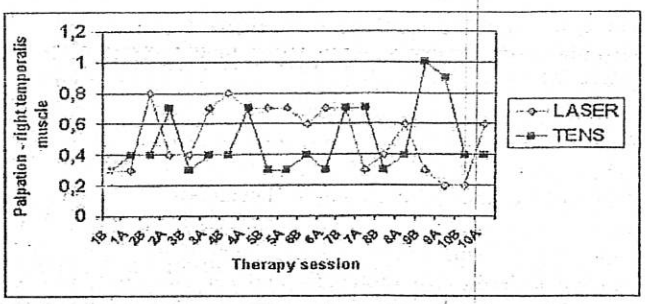

Fig 3: Mean palpation of the right temporalis muscle for each evaluated group, before (B) and after (A) each therapeutic session

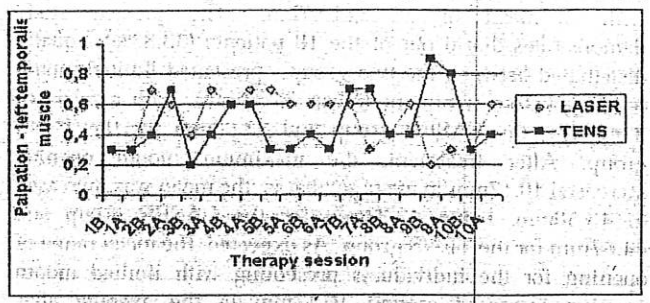

Fig 4: Mean palpation of the left temporalis muscle for each evaluated group, before (B) and after (A) each therapeutic session

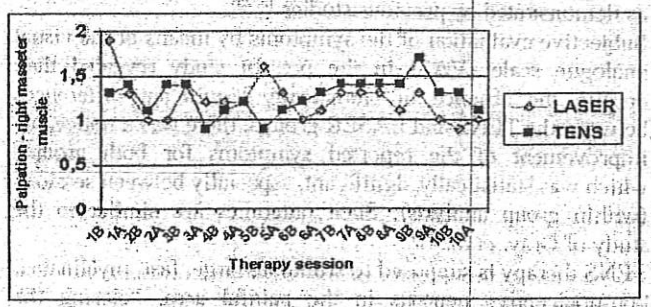

Fig 5: Mean palpation of the right masseter muscle for each evaluated group, before (B) and after (A) each therapeutic session

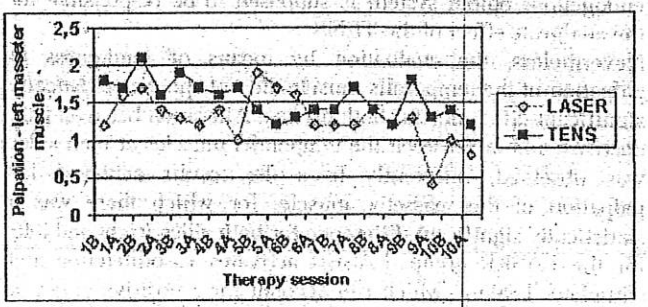

Fig 6: Mean palpation of the left masseter muscle for each evaluated group, before (B) and after (A) each therapeutic session

Discussion

Electrical modalities represent additional options in the management of TMD. Aspects related to spontaneous remission of the disease and individual pain perception should be taken into account before the present results are judged. Several criteria are considered for judgment of treatment effectiveness, including mandibular movement, pain scales

and ratings of muscle tenderness to palpation.

Mandibular movement's allow for a mouth opening up to 60mm. In adults, 15 to 25mm of mouth opening is achieved by means of rotation of the condyle at the inferior border of the disc, measured between the mandibular and maxillary incisors. The remaining range of movement is attributed to the sliding of the condyle-disc complex beyond the fossa, over the articular eminence. In a study conducted by Souza and Guimarães [27], the mean range of mouth opening of 394 patients, including asymptomatic and symptomatic patients, was 46.29mm for the maximum mouth opening (MMO) with a mean age of 34 years, being 326 females (82.75%) and male (17.25%). Thirty patients presented limited mouth opening with a mean of 33.13±1.67mm. The present study demonstrates that 6 out of the 18 patients (33.33%), equally distributed between the two groups, presented limited mouth opening before treatment (mean 33.33mm), with a mean of 33mm for the LASER group and 33.66mm for the TENS group. After treatment, the maximum mouth opening increased 10.17mm in average, that is, the mean was increased to 43.50mm, being 42.33mm for the LASER group and 44.67mm for the TENS group. As expected, the mean range of opening for the individuals presenting with limited mouth opening increased around 10.17mm in the average after treatment completion, thus demonstrating that both conservative methods are effective to increase mouth opening, as demonstrated by previous studies [5, 25].

Subjective evaluation of the symptoms by means of the visual analogue scale (VAS) in the present study revealed that, despite the absence of statistically significant differences between the TENS and LASER groups, there was a noticeable improvement of the reported symptoms for both groups, which was statistically significant, especially between sessions (within group analysis). Such outcomes are similar to the study of Gray, *et al.* [13].

TENS therapy is supposed to stimulate large, fast, myelinated, non-nociceptive neurons in the painful area, "closing the central gate" for those stimuli generated by pain specific fibers. This system, associated to the activation of an endogenous opioid system is supposed to be responsible for the analgesic effect of the TENS.

Nevertheless, the evaluation by means of tenderness to palpation of the temporalis muscle did not show a statistically significant difference for both groups. Alteration between pain decrease and increase on the temporalis muscles at both sides was observed, differently from the results achieved for palpation of the masseter muscle, for which there was a statistically significant difference for both sides (right and left) for the LASER group. LASER activates vasodilatation and stimulates healing, which can account for a positive effect in muscle pain, where hypoxia seems to be a potential excitatory factor for nociceptive first-order neurons.

Some studies have questioned the clinical and biological benefits of the physical therapy in the treatment of musculoskeletal pain [10]. Some researchers believe that there is no scientific evidence demonstrating that the low level laser as applied may reach deep structures [26]. Other authors demonstrate the effectiveness of the low level laser therapy for musculoskeletal disorders [3], in agreement with the present results.

It is widely accepted that TMD symptoms are fluctuating and self-limiting [23]. It means that many patients will exhibit a natural and expected improvement, even if no therapy is offered. This fact also should be considered when interpreting the actual findings, since a placebo group was not used as control, which is a limitation of the present study.

Basford [1] in 1989, criticized the quality of many clinical publications. Even though some authors have questioned the therapeutic effectiveness of these devices [3, 10, 21] and the obligatory inclusion of a control group for the test of any treatment modality, it is believed that since TMD patients do not receive any type of therapy other than TENS and laser, the actual findings can be considered acceptable.

The use of TENS has been suggested by many authors for treatment of trigeminal neuropathy, migraine, muscle contraction and TMJ pain [14, 18, 19, 22]. Similar results were obtained in the present study, in which a quite satisfactory outcome was achieved when the report of pain (VAS) was considered.

Several studies also indicate physical therapy for TMD treatment [11, 23, 24, 28, 30]. The available literature suggests that physical therapy should be initiated as soon as possible in order to significantly reduce the duration of symptoms[9]. Controlled and longitudinal studies are recommended to evaluate the real validity of electrical therapy in TMD patients and for how long the pain/dysfunction relieve obtained in a short-term study like the present is maintained

Future Research

- Compare TENS and Ultrasound for TMJ Disorders.
- Compare LASER and Ultrasound for TMJ Disorders.

Conclusion

Within the limitations of this study, the following conclusions were drawn.

- Both therapies were effective for decreasing the symptoms of TMD patients, regardless of the type of device used. The cumulative effect may be responsible for this improvement, since it is just observed after several sessions, whereas the immediate effect was not significant.
- Caution is suggested when analyzing these results, because of the self-limiting aspect of musculoskeletal conditions like TMD. Further clinical studies must be performed to evaluate the real efficacy of physical therapy modalities.

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Conflict Of Interest

The present study does not have any conflicts of interest and Author has no issues if IJMHR shares data and materials of present study. The author adheres to all the policies of IJMHR.

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Compare the effectiveness between ultrasound therapy and laser therapy in the management of temporomandibular joint disorders

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Abstract
Background: Temporomandibular disorders (TMD) are characterized by the presence of temporomandibular joint (TMJ) and/or masticatory muscle pain and dysfunction. Ultrasound therapy and low-level laser therapy (LLLT) have been recognized as therapeutic modalities for the treatment of TMD, especially when the presence of inflammatory pain is suspected. This study aims to compare the efficacy of the two treatment modalities in various TMJ disorders.
Objective: The aim of this study was to evaluate the efficacy of low intensity or LLLT and Ultrasound therapy in the treatment of patients with TMD.
Materials and Methods: A sample of 30 individuals, divided into two groups presenting signs and symptoms of TMD (I - LLLT and II - Ultrasound therapy) was taken. Both therapies were done in a total of 14 sessions. Therapy was performed for 5 days within the 1st week and then on the 30th day and the 60th day. The visual analogue scale was used to evaluate pain, digital vernier calliper used to evaluate mouth opening. Deviation from normal motion and clicking were also noted on opening and closing. The analysis of variance for repeated measurements and Tukey's tests were used for the statistical analysis.
Results: The results showed an increase in maximum mouth opening and a decrease in tenderness to palpation for both groups. Results also showed a decrease in clicking sound and deviation in both groups, although more evident for the low-level laser group.
Conclusion: Authors concluded that both therapies were effective as part of the TMD treatment though lasers proved better. However, caution is recommended when judging the results due to the self-limiting aspect of musculoskeletal conditions such as TMD.

Keywords: temporomandibular joint disorders; ultrasound therapy, laser therapy

Introduction

Temporomandibular disorders (TMD) consist of a number of clinical conditions that involve the masticatory musculature and/or temporomandibular joints (TMJ) and associated structures. Failure of any one component of these structures may impair the function of the entire system as a whole. Although the etiology of TMD is not well established, it is known that somatic or psychosocial factors may cause or maintain the disease. It is diagnosed in patients who suffer from muscle and/or joint pain spontaneously, by palpation or function and limited mandibular movements. Joint sounds are another symptom of TMD. Although pain around the myofascial region may be constant or intermittent, it is usually long-lasting and restricting. Non-surgical treatments of TMD generally consist of medications (such as non-steroidal anti-inflammatory drugs and antidepressants), consuming soft foods, treatment of parafunctional activities, occlusal splints, physical therapy such as ultrasound and transcutaneous electrical neural stimulation (TENS) alternative therapies [1].

TMD is considered the most common cause of pain of non-dental origin in the orofacial region and contains a varied group of disorders with common symptoms of psycho-physiological orofacial pain, masticatory dysfunction, or both. Signs and symptoms of this dysfunction are present in approximately 86% of the population, most frequent in women in the 30 years old age group [2].

Dysfunctions in the masticatory muscles are considered the main originating cause of non-dental pain in the orofacial region. The pain described as facial pain, headache, or earache is commonly intensified by mandibular function. TMDs are also accompanied by recurring headaches and pain in the neck, showing a high incidence of signs and symptoms such as muscle spasms, reflex pain, difficulty in joint movement, crepitation, headache, and hearing disorders. The physical therapy approach and appropriate treatment plans for TMD must necessarily be based on the diagnosis. Laser photobiomodulation is a low-cost non-invasive type of treatment that can be used for controlling a variety of such conditions. It is frequently used in clinical practice for pain relief and tissue regeneration and has been certified as beneficial in treating temporomandibular dysfunctions. Among the therapeutic effects are anti-inflammatory,

analgesic and cell activity modulating actions, which have been proven in various studies. The mode of action of laser photobiomodulation is by activating the components of the mitochondrial respiratory chain, resulting in the start of a series of cellular events. Once absorbed by the tissues, the laser radiation causes the release of histamine, serotonin, bradykinin, and prostaglandins that are related to pain. It is also capable of modifying cell and enzymatic activities [3]. The use of low-level laser therapy (LLLT) has gained popularity in recent years as a method of management of many localized, painful, musculoskeletal conditions. Although phototherapy devices have been in use for LLLT treatment since the mid-1960s, their therapeutic value remains controversial as the literature has conflicting results. In the past few years, a number of clinical trials and analyses have shown that LLLT effectively treats different musculoskeletal and neurogenic pain pathologies. However, limited information still exists about the effects of LLLT in such conditions [1].

Ultrasound therapy is used to relax hyperactive muscles. Ultrasound therapy therapy produces low-amplitude, a low-frequency alternating stimulus that causes vibrations. Applied bilaterally between the TMJ and the coronoid process, the stimulus reaches the deep mandibular division of the trigeminal nerve, as well as the superficial facial nerve. Ultrasound therapy is applied to reduce the muscular activity of masticatory muscles [3].

LLLT is in accordance with TMD's treatment philosophy because it represents a non-invasive, reversible therapy without any side effects. LLLT makes use of electromagnetic radiation of a single wavelength, usually in the red or infrared regions. LLLT also helps provide treatment for several pathologies like impaired wound healing, pain conditions, and inflammatory situations [4].

Methods

This study involved 30 patients that came to the Department of Prosthodontics and the Department of Oral Medicine of ITS Paramedical College, Ghaziabad with diagnoses of TMD of multiple causes. Informed consent for participation in this study was obtained in all cases. Following a preliminary evaluation to exclude patients with presence of systemic diseases and those with history of recent trauma, the inclusion criteria comprised of patients with presence of pain, reciprocal joint clicking, restricted mouth opening and jaw deviation and not having medical or pharmacological treatment for TMD. Patients presented multiple causes of TMD. During the study, patients were instructed not to take systemic medication for TMD. Prior to the therapies, the patients were made to sit in a dental chair in an upright position with their heads resting on the head rest. Patients were instructed to open their mouth until it reached maximum capability without excessive discomfort. Clicking sound was noted on opening and closing of the mouth.

Pain was evaluated using the visual analogue scale (VAS). With a digital vernier calliper, the total mouth opening was recorded, with the measure being performed from the incisal of the upper incisors to the incisal of the lower incisors. All patients received both methods randomly alternated, in one treatment session per day for 5 days, followed by recall on the 30th and 60th day. LLLT was performed with a continuous-wave diode laser (Lambda SPA - Italy), emission wavelength of 980 nm, output power of 1 W for 60 s. Four sites were chosen to receive the irradiation: The area over the masseter muscle, the temporal muscle, the condyle, and pre-tragal region. The treatment was performed bilaterally with total time duration of 10 min. Ultrasound therapy was executed with a tranducer head output frequency 3 MHz. The total duration of the treatment was 10 min. The treatment was performed bilaterally. The position of the electrode was between the TMJ and the coronoid process, to allow the arrival of the stimulus to the trigeminal nerve as well as the facial nerve. The results were compared for each individual treatment (before and after treatment values), as well as between treatments (mean of the after treatment improvement).

Statistical Analysis

Data were summarized as mean±standard deviation (SD). Groups were compared by two factors (groups × periods) repeated measures analysis of variance (ANOVA) and the significance of mean difference within and between the groups was done by Tukey's *post-hoc* test. Categorical groups were compared by Chi-square ($\chi 2$) test. A two-sided ($\alpha = 2$) $P < 0.05$ was considered statistically significant. All analyses were performed on SPSS software.

Results

Basic Characteristics

The basic characteristics *viz.*, age and sex distribution of two groups (Ultrasound therapy and LASER therapy) are summarized in Table 1. The age of Ultrasound therapy and LASER groups ranged from 22-66 to 26-52 years, respectively with mean (±SD) 45.20 ± 12.70 years and 40.07±7.30 years, respectively. The mean age of Ultrasound therapy was slightly higher than LASER group but not differed statistically (t=1.36, P=0.186). Further, in both groups, the frequency of males was higher than females with slightly higher being in TENS (66.7%) as compared to LASER (60.0%); however, the sex proportion (female/male) also not differed ($P > 0.05$) between the two groups ($\chi 2$=0.14, P=0.705), i.e. found to be statistically the same. In other words, subjects of two groups were age and sex matched and comparable.

Table 1: Basic characteristics of two groups

Basic characteristics	US therapy n=15 (%)	LASER therapy n=15 (%)	// $\chi 2$ value	P value
Age (years)	45.20±12.70	40.07±7.30	1.36	0.186
Sex				
Females	5 (33.3)	6 (40.0)	0.14	0.705
Males	10 (66.7)	9 (60.0)		

Primary Outcome Measures

Maximum mouth opening

Comparing the mean maximum mouth opening of two groups over the periods, ANOVA revealed significant effect of both groups (treatments) (F=18.81, $P < 0.001$) and period (time) (F=65.36, $P < 0.001$) on maximum mouth opening. Further, the interaction (groups × periods) effect of both on maximum mouth opening was also found to be significant (F=19.89, $P <$

0.001).

Further, for each group, comparing the mean maximum mouth opening between the periods (i.e. within groups), Tukey test revealed significant ($P < 0.01$ or $P < 0.001$) improvement in maximum mouth opening of both the groups over the periods. Similarly, for each period, comparing the mean maximum mouth opening between the groups, Tukey test revealed significantly ($P<0.05$ or $P<0.01$) different and higher improvement in maximum mouth opening of LASER group as compared to Ultrasound Therapy group at all post periods (day 1-60). Moreover, at final evaluation, the net improvement (i.e. mean change from day 0 to 60) in maximum mouth opening of LASER group (28.3%) was 3.2-fold (or 19.4%) higher as compared to Ultrasound Therapy (8.9%).

VAS

The mean VAS scores in both groups decrease (improve) after the treatments, and the decrease (improvement) was evident higher in LASER group as compared to Ultrasound Therapy. Comparing the mean VAS scores of two groups over the periods, ANOVA revealed significant effect of both groups (treatments) ($F=57.46$, $P<0.001$) and period (time) ($F=99.24$, $P < 0.001$) on VAS scores. Further, the interaction (groups × periods) effect of both on VAS scores was also found to be significant ($F=16.79$, $P<0.001$).

Further, for each group, comparing the mean VAS scores between the periods (i.e. within groups), Tukey test revealed significant ($P < 0.05$ or $P < 0.01$ or $P < 0.001$) improvement in VAS scores of both the groups over the periods.

Similarly, for each period, comparing the mean VAS scores between the groups, Tukey test revealed significantly ($P< 0.05$ or $P < 0.01$ or $P < 0.001$) different and higher improvement in VAS scores of LASER group as compared to Ultrasound Therapy at all post periods (day 1-60). Moreover, at final evaluation, the net improvement (i.e. mean change from day 0 to 60) in VAS score of LASER group (77.1%) was 1.6-fold (or 29.8%) higher as compared to Ultrasound Therapy (47.3%).

Secondary Outcome Measures

TMJ sound

The pre (day 0) and post (day 60) TMJ sound presence of two groups are summarized in Table 4. At day 0, the presence of TMJ sound was higher in LASER group (66.7%) than Ultrasound Therapy group (53.3%); however, at day 60 (final evaluation) it was lower in LASER group (6.75) as compared to Ultrasound Therapy group (26.7%). Comparing the presence of TMJ sound of two groups at two different periods, $\chi 2$ test revealed similar TMJ sound between the two groups ($\chi 2=1.98$, $P=0.159$), i.e. not differed statistically.

Muscle tenderness

The pre (day 0) and post (day 60) presence of muscle tenderness of two groups are summarized in Table 3. At day 0, the muscle tenders was present 100.0% in both groups; however, at final evaluation, it decrease (60.0%) significantly in LASER group as compared to Ultrasound Therapy group ($\chi 2=5.66$, $P=0.017$).

Deviation

The pre (day 0) and post (day 60) presence of deviation of two groups are summarized in Table 4. At day 0, both groups showed similar deviation (60.0%); however, not differed also after 60 days post-treatments ($\chi 2 = 1.15$, $P= 0.284$) though it lowered 33.3% more in LASER group as compared to Ultrasound Therapy group.

Discussion

In the present study, many criteria were considered for judgment of treatment effectiveness including range of mouth opening, pain scales and ratings of muscle tenderness and clicking sounds.

Table 2: Pre (day 0) and post (day 60) distribution of TMJ sound presence of two groups

TMJ sound	US therapy	LASER therapy		$\chi 2$ value	*P* value
(present)	*n*=15 (%)	(*n*=15) (%)		(df=1)	
Day 0	8 (53.3)	10	(66.7)	1.98	0.159
Day 60	4 (26.7)	1	(6.7)		

TMJ: Temporomandibular joint, US: Ultrasound therapy

Table 3: Pre (day 0) and post (day 60) distribution of muscle tenderness presence of two groups

Muscle	US therapy	LASER therapy	$\chi 2$ value	*P* value
tenderness	*n*=15 (%)	*n*=15 (%)	(df=1)	
(present)				
Day 0	15 (100.0)	15 (100.0)	5.66	0.017
Day 60	10 (66.7)	1 (6.7)		

Table 4: Pre (day 0) and post (day 60) distribution of deviation presence of two groups

Deviation	US therapy	LASER therapy	$\chi 2$ value	*P* value
(present)	*n*=15 (%)	*n*=15 (%)	(df=1)	
Day 0	9 (60.0)	9 (60.0)	1.15	0.284
Day 60	9 (60.0)	4 (26.7)		

US: Ultrasound therapy

Similar to results shown in our study, many studies have shown the effectiveness of TENS in the management of TMD, individually as well as combined with other therapies and are known to improve the stomatognathic system functionally.5 Grossmann *et al.*, 2012 presented a review article on the effectiveness of Ultrasound Therapy for TMD and concluded that Ultrasound Therapy is a treatment alternative for pain as well as TMD.6

Monaco *et al.*, 2012 performed studies on 60 patients to evaluate the effect of Ultrasound Therapy on electromyography and kinesiographic activity of patient with TMD. They concluded that Ultrasound Therapy could be effective to reduce the surface electromyography activity in masticatory muscles and improve interocclusal distance of TMD patients.7

Several reports have documented the positive effects of Ultrasound Therapy and LLLT in TMD. In our study, LLLT has shown to have eliminated signs and symptoms of TMD more than TENS therapy has. Similar results were seen by Kato *et al.*, in 2006 who performed a comparative study on 18

patients with chronic TMD using Ultrasound Therapy and LLLT and concluded that both therapies were effective for decreasing the symptoms of TMD [8].

Núñez *et al.*, in 2006 performed a comparative study on 10 patients, 18-56 years of age with TMD, using Ultrasound Therapy and LLLT and noted the range of mouth opening in the patients. The patients received both methods of treatment in 2 consecutive weeks. Comparing the two methods, the values obtained after LLLT were significantly higher than those obtained after Ultrasound Therapy ($P < 0.01$). This concluded that even though both methods are effective to improve mouth opening, by comparing the two methods LLLT was more effective than Ultrasound Therapy [4].

A systematic review was done by Maia *et al.*, in 2012 on the effect of LLLT on pain levels in patients with TMD. 14 studies were reviewed and a reduction in pain levels was reported in 13 studies. Most papers showed that LLLT seemed to be effective in reducing pain from TMD similar to the results shown in our study. However, the heterogeneity of the standardization regarding the parameters of laser calls for caution in interpretation of these results.[2]

Another meta-analysis study by Enwemeka *et al.*, in 2004 on the efficacy of low-power lasers in tissue repair and pain control revealed a positive effect of laser phototherapy on tissue repair and pain control. The positive effect of treatment on specific indices of tissue repair was evident in the treatment effect sizes determined as follows: Collagen formation (d=+2.78), rate of healing (d=+1.57), tensile strength (d=+2.13), time needed for wound closure (d=+0.76), tensile stress (d = +2.65), number and rate of degranulation of mast cells (d=+1.87), and flap survival (d=+1.95). Further, analysis revealed the positive effects of various wavelengths of laser light on tissue repair, with 632.8 nm having the highest treatment effect (d=+2.44) and 780 nm the least (d=0.60). The overall treatment effect for pain control was positive as well (d=+1.11). These findings mandate the conclusion that laser phototherapy is a highly effective therapeutic armamentarium for tissue repair and pain relief.9

In another study in 2009 by Carrasco *et al.*, 60 patients with myofascial pain syndrome and having one active trigger point in the anterior masseter and anterior temporal muscles were selected and assigned randomly to six groups (n=10): Groups I-III were treated with gallium aluminum arsenide (780 nm) laser, applied in continuous mode and in a meticulous way, twice a week, for 4 weeks. Groups IV-VI were treated with placebo applications, simulating the same parameters as the treated groups. Pain scores were assessed just before, then immediately after the fourth application, immediately after the eighth application, at 15 days and 1 month following treatment. A significant pain reduction was observed over time ($P < 0.001$). The analgesic effect of the LILT was similar to the placebo groups. Using the parameters described in this experiment, LILT was effective in reducing pain experienced by patients with myofascial pain syndrome.10

Another meta- analysis of the efficacy of phototherapy in tissue repair by Fulop *et al.*, was done by aggregating the literature and using statistical meta-analysis to analyze pertinent studies published between 2000 and 2007. Their findings indicated that phototherapy is a highly effective form of treatment for tissue repair, with stronger supporting evidence resulting from experimental animal studies than human studies.11

Conclusion

1. Both therapies (LLLT and Ultrasound Therapy) were effective in the management of TMDs
2. Range of mouth opening, tenderness (temporomandibular as well as muscular), clicking sound as well as deviation from normal motion have improved for both groups, but LLLT was notably more effective than Ultrasound Therapy.
3. More longitudinal and controlled studies must be performed to evaluate the real effect of physical therapy modalities on TMD signs and symptoms.

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DATE 28.08.18

To,
The Controller of Examination,
Baba Farid University of Health Sciences.
Faridkot.

Subject – Matter regarding payment of Internal Examiners (for practical and for the invigilators for Theory M/J 2018).

Respected Sir,

Sir, the Internal Examiners for the subject of Physiotherapy (Medical and Clinical Faculty) has requested many times to give us remuneration for being a internal examiner because their other faculty members who are internal examiners for Medical and allied health examinations are getting their respective dues from the concerned colleges. Furthermore, I also request you to permit us to pay remuneration for the invigilators (for the University theory papers) & for the other supporting staff, because they all are doing their duties perfectly for smooth conduction of university examination, as every college has to accommodate more than 300 students per session in the centre (as allotted by the University). Moreover, I request you to kindly release some fund for refreshments which includes (tea and snacks) for the centre superintendent, invigilators, clerks, attendants and security personnel and also for stationary.

Its my genuine and humble demand please consider it at earliest.

Thanking You,

Sandeep Singh

Prof.Sandeep Singh Saini
Principal
College Of Physiotherapy
Cc: The Dean (Faculty of Physiotherapy Sciences)
The Chairman (BOS-Physiotherapy Sciences)

6/9/18