

# CURRICULUM VITAE



## CONTACT INFORMATION:

Prof. Muhammed D. Al-Jarrah  
Jordan University of Science and Technology  
Department of Rehabilitation Sciences  
22110 Irbid – Jordan P O Box 3030  
Email: [jarrahm@just.edu.jo](mailto:jarrahm@just.edu.jo)

## Current Address:

Fatima College of Health Sciences  
Abu Dhabi- Al Mafraq- UAE  
Email: [Muhammad.aljarrah@fchs.ac.ae](mailto:Mohammad.aljarrah@fchs.ac.ae)

PhD in Physical Therapy and Rehabilitation Sciences.  
The University of Kansas Medical Center, USA, 2006  
2006-2011: Assistant Professor  
2011-2019: Associate Professor  
2019- Current. Full Professor

## Links

**Scopus link:** <https://www.scopus.com/authid/detail.uri?authorId=24292931000>  
**Research Gate Link:** [https://www.researchgate.net/profile/Muhammed\\_Al-Jarrah](https://www.researchgate.net/profile/Muhammed_Al-Jarrah)  
**Google Scholar Link:** <https://scholar.google.com/citations?user=ya93ZW0AAAAJ&hl=en>  
**PubMed Link:** [https://www.ncbi.nlm.nih.gov/pubmed/?term=Al-Jarrah%20M%5BAuthor%5D&cauthor=true&cauthor\\_uid=30272530](https://www.ncbi.nlm.nih.gov/pubmed/?term=Al-Jarrah%20M%5BAuthor%5D&cauthor=true&cauthor_uid=30272530)

## PERSONAL INFORMTION:

Place of Birth: Irbid – Jordan  
Marital Status: Married with three kids.

## ACADEMIC TRAINING:

### 1) **Doctorate of Philosophy, Physical Therapy and Rehabilitation Sciences/ Neurorehabilitation**

Department of Physical Therapy and Rehabilitation Science  
The University of Kansas Medical Center  
3901 Rainbow BLVD, Kansas City, KS 66106, USA

May, 2006.

**2) Master of Science, Clinical Physical Therapy/Orthopedic PT**

Department of Physical Therapy and Rehabilitation Sciences

The University of Kansas Medical Center

May, 2004.

**3) Bachelor of Science, Allied Medical Sciences, 1991**

Department of Allied Health Sciences

Faculty of Medicine

Jordan University of Science and Technology

Irbid, Jordan

**CERTIFICATIONS:**

**1) LEND Training: Leadership Education in Neurodevelopment and Disability**

The University of Kansas Medical Center, KS. Development and Disability Center

August, 2005: 6-month federal clinical training program for pediatrics physical therapy subspecialty.

**3) Advance courses: Three months training program**

Advanced Neuroanatomy and Human Body Embalming:

The University of Iowa. Iowa City, IA

February, 1996

**AREAS OF SPECIALIZATION:**

1) Orthopedic Physical Therapy (Major)

3) Neurorehabilitation (Major and PhD Thesis)

**PhD AREA OF RESEARCH:**

Effect of Aerobic Exercise Training in the Brain of Mouse with MPTP/Probencid Induced Chronic Parkinsonian. This project included three research projects:

Treadmill exercise training effect on:

- Cardiorespiratory and endurance indicators in mouse model of chronic Parkinsonism.
- Angiogenesis in the striatum of chronic Parkinsonian mouse
- Neurotrophic factors in the substantia nigra and striatum in mouse model of chronic Parkinsonism.

**AREAS OF RESEARCH INTEREST:**

- 1) Effect of treadmill exercise training on the brain of rat model with type 1 diabetes, and mouse model of chronic Parkinsonism.
- 2) Molecular alteration of muscular system in Diabetes and Parkinson's disease
- 3) Stroke rehabilitation outcomes.

**PROFESSIONAL EXPERIENCE:**

**August 2019 – Current: On sabbatical leave to Fatima College of Health Sciences. Abu Dhabi. UAE. Head of Physiotherapy Department**

**Sept. 2016-Sept 2018. Dean. Faculty of Applied Medical Sciences. Jordan University of Science and Technology.**

Sept. 2012-Sept 2016. **Head and Founder.** Physiotherapy Department. Fatima College of health Sciences (FCHS) in both Abu Dhabi and Al-Ain Campuses. United Arab Emirates, **UAE**, and Adjunct Associate Professor – **Monash University. Australia.**

Sept. 2010 – August 2012. **Acting Head.** Department of Allied Medical Sciences.

Sept. 2008- 2009. **Vice Dean.** Faculty of Applied Medical Sciences. Jordan University of Science and Technology (JUST), Irbid, Jordan.

Sept. 2007- Sept 2008: **Assistant Dean,** Faculty of Applied Medical Sciences

May, 2006-August 2007: **Assistant professor and chairperson of clinical physical therapy division,** Faculty of Applied Medical Science, JUST.

2006-2008: **Assistant professor of Physical Therapy. New York Institute of Technology. Master Program of Physical Therapy.**

2003- 2006: **Teaching Assistant,** Department of Physical Therapy and Rehabilitation Sciences, The University of Kansas Medical Center. Kansas City, KS, USA

2001-2003: **Research Assistant,** Department of Physical Therapy and Rehabilitation Sciences. The University of Kansas Medical

1994-2001: **Teaching and Research Assistant,** Department of Anatomy, Faculty of Medicine, Jordan University of Science and Technology. Irbid –Jordan.

1991-1994: Medical Laboratory Technologist: Palestine Hospital, Amman, Jordan

#### **AWARDS/HONORS:**

- EARLY CAREER ACHIEVEMENT IN HEALTH PROFESSIONS ALUMNUS AWARD of 2014. The University of Kansas Medical Center. USA, best graduate. (<http://www.kumc.edu/alumni/alumniF-awards-program/muhammed-al-jarrah.html>).
- Dissertation scholarship Award: 2<sup>nd</sup> place for the best dissertation project at The University of Kansas Medical Center, May, 2005
- Diversity Scholarship Award for the year of 2005, First Place. The University of Kansas Medical Center.
- Student Travel Award for research presentation. First place, February 2006.

#### **PROFESSIONAL AND SCIENTIFIC MEMBERSHIP**

- American Physical therapy Association, 2003
- Editorial Board Member: Neurorehabilitation Journal, 2010
- Editorial Board member: Journal of Novel Physiotherapy and Physical Rehabilitation. 2014

#### **Ongoing Clinical experience**

Two days of clinical duties in physical therapy clinic in the teaching hospital of Jordan University of Science and Technology; King Abdullah University hospital. This clinical experience includes evaluation of patient's rehabilitation status, and intervention.

## BOOKS

- 1) "Beneficial effects of Physiotherapy on function in Parkinson's disease". **Muhammed Al-Jarrah PhD, PT**. ISBN 978-3-639-18978-0. VDM Verlag Dr. Müller AG & Co. KG ([www.vdm-verlag.de](http://www.vdm-verlag.de)). Germany.. Südwestdeutscher Verlag für Hochschulschriften AG & Co. KG ([www.svh-verlag.de](http://www.svh-verlag.de)) LAP Lambert Academic Publishing AG & Co. KG ([www.lap-publishing.com](http://www.lap-publishing.com)). Germany. **2009**

## RECENT PUBLICATIONS: Peer Reviewed Journal Articles

- 1) **Muhammed Al-Jarrah**, Pothakos, Novikova, Smirnova, Kurz, Stehno-Bittel, and Lau. "Endurance exercise promotes cardiorespiratory rehabilitation without neurorestoration in the chronic mouse model of Parkinsonism with severe neurodegeneration. *Neuroscience* 149 (2007): 28-37
- 2) **Muhammed Al-Jarrah**, Mahmoud Nazzal and Mohammed Jamous "Relationship between functional independent measure (FIM) and Glasgow coma scale (GCS) regarding the rehabilitation outcomes of traumatic brain injuries. *Neurosciences*, **2009**; 14(1): 7
- 3) **Muhammed AlJarrah PhD, PT** , Mohammad Jamous MD, PhD, khalid Al Zailaey (MSc) , Salameh O Bweir'Endurance exercise training promotes angiogenesis in the brain of chronic/progressive mouse model of Parkinson's Disease. *Neurorehabilitation*1;26(4): 369-73, **2010**
- 4) **Muhammed Al-Jarrah**, Mohammed Jamous, Yousef Al-Hamadi. Exercise training modulates the expression of HSP and iNO in the brain of diabetic rats. *Proceedings of European Journal of Physical Therapy and Rehabilitation Medicine*, **2010**.
- 5) **Muhammed D. Al-Jarrah**, Ismail Matalka MD, FRCPath , Hasan Al AseriAliaMohtaseb MD, Irina V Smirnova, LesyaNovikova, Lisa Stehno-Bittel PhD, PT. SalamehBweir Greater Endometrial Hyperplasia and Biomarkers for Endometrial Cancer Present in a Rat Model of Type 1 Diabetes. *J Clin Med Res* **2010**;2 (5):207-214

6) **Muhammed Al-Jarrah**, Mohammed Jamous. Effect of exercise on the expression of NSE,GFAP, and S100B in the striatum of chronic/progressive mouse model of Parkinson's disease. *Neurorehabilitation*, **2011**;28(4):359-63

7) MikhledMaayaha, **Muhammed Al-Jarrah**. Evaluation of Transcutaneous Electrical Nerve Stimulation as a Treatment of Neck Pain due to Musculoskeletal Disorders. *J Clin Med Res* • **2010**;2(3):127-136.

8) Mohammed Jamous, **Muhammed Al-Jarrah**, Conservative Management of Acute Epidural Hematoma in Pediatric Age Group: *Pediatric Neurosurgery*, **2009**, 181-185

9) Azab M, **Al-Jarrah M**, Nazzal M, Maayah M, Sammour MA, Jamous M. "Effectiveness of Constraint-Induced Movement Therapy (CIMT) as Home-Based Therapy on Barthel Index in Patients with Chronic Stroke.". *Top Stroke Rehabil.* **2009** May-Jun;16(3):207-11.

10) SalamehBweir, **Muhammed Al-Jarrah**, Abdul-MajeedAlmalty, MikhledMaayah, Irina V. Smirnova, LesyaNovikova and Lisa Stehno-Bittel. Ten Weeks of Resistance Exercise Training Lowers HbA1c More Than Aerobic Training. *Diabetology& Metabolic Syndrome* **2009**, 1:27.

11) Jamous Mohammed, Barbarawi Moh'd, Samrah Shaher, Mohamad Nidal Khabaz, **Muhammed Al-Jarrah**, Dauod Sulieman. "Emergency Decompression Craniotomy for Trauma patients with Glasgow Coma Scale of 3 and Bilateral Fixed and Dilated Pupils". *European Journal of Trauma and Emergency Surgery*, **2010**, Volume 36, Number 5, Pages 465-469-5

12) Lisa VanHoose, Youssef Sawers , RajprasadLoganathan, James L. Vacek, Lisa Stehno-Bittel, LesyaNovikova, **Muhammed Al-Jarrah**, Irina V. Smirnova"Electrocardiographic changes with the onset of diabetes and the impact of aerobic exercise training in the ZDF rat. *Cardiovascular Diabetology*": **2010** Sep 22;9:56

13) **Muhammed Al-Jarrah**, Mohammed Jamous: Effect of endurance exercise training on the expression of GFAP, S100B, and NSE in the striatum of chronic/progressive mouse model of Parkinson's disease. *NeuroRehabilitation*. **2011** Jan 1;28(4):359-63.

14) Emmanuel B. John, Lucinda Pfalzer, Donna Fry, Leslie Glickman, Sakamoto Masaaki, Carla Sabus, Udoka A. Okafor, **Muhammed Al-Jarrah** "Establishing and Upgrading Physical Therapist Education in Developing Countries: Four case examples of service by Japan and United States PT Programs to Nigeria, Suriname,

Mongolia, and Jordan.”. Journal of Physical therapy Education, **2012**. Vol 26, No 1, Winter 2012: 29-39

15) Mikhled F. Maayah, **Muhammad D. Al-Jarrah**, Saad S. El Zahrani, Emad T. Ahmed, Bassem M. Raafat, Yaser Omer Abu Ali and Muhsen B. Alsufiany. Comparison of The Mikhled Knee Exercise Program and a Gymnasium-Based Exercise Program Regarding Changes in Health Status and Life Quality of Subjects with Osteoarthritis of the Knee Joint. Journal of Applied Sciences Research, 8(3): 1453-1459, **2012**

16) Mikhled F. Maayah, **Muhammad D. Al-Jarrah**, Saad S. El Zahrani, Ali H. Alzahrani, Emad T. Ahmed, Amr A. Abdel-Aziem, Gopichandran Lakshmanan, Nabeel A. Almawajdeh, Muhsen B. Alsufiany, Yaser O. M. Abu Asi. Test-retest strength reliability of the Electronic Push/Pull Dynamometer (EPPD) in the measurement of the quadriceps and hamstring muscles on a new chair. Open Journal of Internal Medicine, **2012**, 2, 123-128.

17) **Muhammed Al-Jarrah**, Mohammed Bani Ahmad, Mikhled Maayah. Ahed Al-Khatib. Effect of Exercise Training on the Expression of p53 and iNOS in the Cardiac Muscle of Type I Diabetic Rats. J Endocrinol Metab • **2012**;2(4-5):176-180.

18) **Muhammed Al-Jarrah**, Ziad Bataineh, Heyam Obaidat, Lori Walton, Ahed Al-Khatib. Endurance exercise training protects against the upregulation of nitric oxide in the striatum of MPTP/probencid mouse model of Parkinson's disease. NeuroRehabilitation. **2013** Jan 1;32(1):141-7.

19) **Muhammed Al-Jarrah**. Exercise training and rehabilitation of the brain in Parkinson's disease. Clinical Medicine Research May 2:(2); 11-17, **2013**.

21) **Muhammed Al-Jarrah**, Mohammed Bani Ahmad, Mikhled Maayah, Ahed Al-Khatib. Effect of Exercise Training on the Expression of p53 and iNOS in the Cardiac Muscle of Type I Diabetic Rats. J Endocrinol Metab , **2012**;2(4-5):176-180.

22) **Muhammed Al-Jarrah**. Exercise training and rehabilitation of the brain in Parkinson's disease. Clinical Medicine Research. **2013**; 2(2) : 11-17.

23) **Muhammed Al-Jarrah** , Samira Shaheen , Najib Kisani , Simona Bar Haim, On behalf of MESF Project. Individualized treadmill exercise training improves functional outcomes in patients with chronic stroke. Topics in Stroke Rehabilitation, **2013**.

24) **Muhammed Al-Jarrah**. Exercise training and rehabilitation of the brain in Parkinson's disease. *Clinical Medicine Research*, **2013**; 2(2): 11-17.

25) **Muhammed Al-Jarrah** , Nour Erekat , Ahed Al Khatib Upregulation of vascular endothelial growth factor expression in the kidney could be reversed following treadmill exercise training in type I diabetic rats. *World Journal of Urology and Nephrology*, **2014**;3(1):25-29.

26) Bar-Haim S, **Al-Jarrah MD**, Nammourah I, Harries N. Mechanical efficiency and balance in adolescents and young adults with cerebral palsy. *Gait Posture*. 38(4):668-673, 29, **2013**.

27) Mikhled F. Maayah, **Mohammad D. Al-Jarrah**, Saad S. El Zahrani, Ali H. Alzahrani, Emad T. Ahmed. Amr A. Abdel-Aziem, Gopichandran Lakshmanan, Nabeel A. Almawajdeh, Muhsen B. Alsufiany, Yaser O. M. Abu Asi..Test-retest strength reliability of the Electronic Push/Pull Dynamometer (EPPD) in the measurement of the quadriceps and hamstring muscles on a new chair. *Open Journal of Internal Medicine*, **2012**, 2, 123-128.

28) Nour Erekat, **Muhammed Al-Jarrah**, Ahed Al Khatib: Endurance exercise training attenuates the up regulation of iNOS in the skeletal muscles of chronic/progressive mouse model of Parkinson's disease. *J Neurol Res* , **2013**;3(3-4):108-113.

29) Mohammed Fraiwan, Natheer Khasawneh, Ahmad Malkawi, **Muhammed Al-Jarrah**, R. Alsa'di and S. Al-Momani. *Therapy Central: On the Development of Computer Games for Physiotherapy*. IEEE, 2013.

30) Anat Shkedy Rabani, Netta Harries, Ibtisam Namoorah, **Muhammed D. Al-Jarrah**, Amir Karniel, Simona Bar-Haim. Duration and Patterns of Habitual Physical Activity of Adolescents and Young Adults with Cerebral Palsy. *Developmental Medicine & Child Neurology*. **2014**.

31) Nour Erekat, **Muhammed Al-Jarrah**, Ahed Al Khatib. Treadmill exercise training improves vascular endothelial growth factor expression in the cardiac muscle of type I diabetic rats. *Cardiology research*, *Cardiol Res*. **2014**;5(1):23-29.

32) Nour Erekat, Ahed Al-Khatib, **Muhammed Al-Jarrah**. Heat shock protein 90 is a potential therapeutic target for ameliorating skeletal muscle abnormalities in Parkinson's disease. *Neural regeneration Research*. March **2014**, Volume 9.

33) Harries N, Loeppky JA, Shaheen S, **Al-Jarrah M**, Molteni F, Hutzler Y, Bar-Haim S; MESF Project. A stair-climbing test for measuring mechanical efficiency of ambulation in adults with chronic stroke. *Disabil Rehabil.* **2015**;37(11):1004-8

34) Manzar MD, Rajput MM, Zannat W, Hameed UA, **Al-Jarrah MD**, Spence DW, Pandi-Perumal SR, BaHammam AS, Hussain ME. Association between sleep quality and inflammatory complement components in collegiate males. *Sleep and Breath.* **2016** May;20(2):867-72. doi: 10.1007/s11325-015-1249-0..

35) **Al-Jarrah MD**, Erekat NS. Parkinson disease-induced upregulation of apoptotic mediators could be attenuated in the skeletal muscle following chronic exercise training. *NeuroRehabilitation* **2017**;41(4):823-830. doi: 10.3233/NRE-172196.

36) Hikmat Haddoush , **Muhammed Al-Jarrah** , Hanan Khalil , Alham Shorman , Sadeq. The effect of bilateral anodal transcranial direct current stimulation on balance outcomes in patient with Parkinson's disease. *NeuroRehabilitation.* 2018; 42(1):63-68. doi: 10.3233/NRE-172212.

37) Nour Erikat, **Muhammed Al-Jarrah** “Interleukin-1 beta and tumor necrosis factor alpha upregulation and nuclear factor kappa beta activation in the skeletal muscle of a mouse model of chronic /progressive Parkinson disease”. Accepted for publication. *Medical Science Monitor*, 2018.

38) Hikmat Hadoush, Saleem A Banihani, Hanan Khalil, Yasir Al-Qaisi, Alham Al-Sharman, **Muhammed Al-Jarrah**. Dopamine, BDNF and motor function postbilateral anodal transcranial direct current stimulation in Parkinson’s disease. *Neurodegenerative disease Management*, 2018

39) Nour Erikat, **Muhammed Al-Jarrah**. Upregulation of renal proapoptotic factors could be attenuated following endurance exercise training in type I Diabetes: An immunohistochemistry study. Accepted. *Medical Science Monitor*, 2018.

40) Hikmat Hadoush, Alham Al-Sharman, Hanan Khalil, Saleem A. Banihani, **Muhammed Al-Jarrah**. Sleep quality, depression and quality of life after bilateral anodal transcranial direct current stimulation in patients with Parkinson’s disease. *Med Sci Monit Basic Res.* Nov 19;24: 198-205 **2018**.

41) Erekat NS, Al-Jarrah MD. Association of Parkinson Disease Induction with Cardiac Upregulation of Apoptotic Mediators P53 and Active Caspase-3: An Immunohistochemistry Study. *Med Sci Monit Basic Res.* 2018 Aug 23; 24:120-126



- 42) Nour Erekat, **Muhammed Al-Jarrah**. Upregulation of renal proapoptotic factors could be attenuated following endurance exercise training in type I Diabetes: An immunohistochemistry study. *Journal of Natural Science, Biology and Medicine*. 10: 1; 24-28, **2019**,
- 43) Comparison of Habitual Physical Activity and Sedentary Behavior in Adolescents and Young Adults with and without Cerebral Palsy. Ronit Aviram, Netta Harries, Anat Shkedy Rabani, Akram Amro, Ibtisam Nammourah, **Muhammed Al-Jarrah**, Yoav Raanan, Yeshayahu Hutzler Simona Bar-Haim. *Pediatric Exercise Science*. 2019 Feb 1;31(1):60-66, **2019**
- 44) Leeds sleep evaluation questionnaire in Jordanian university students. A psychometric investigation using comparative confirmatory factor analysis. Hameed UA, **Al-Jarrah MD**, Manzar MD, Nair C, Albougami A, Alrasheadi BA, Noohu MM, Salahuddin M. *Saudi Med J*. 2020 Jul;41(7):746-752. doi: 10.15537/smj.2020.7.25146
- 45) Melatonin and dopamine serum level associations with motor, cognitive, and sleep dysfunctions in patients with Parkinson's disease: A cross-sectional research study. Hadoush H, Lababneh T, Banihani SA, **Al-Jarrah M**, Jamous M. *NeuroRehabilitation*. **2020**;46(4):539-549. doi: 10.3233/NRE-203075.
- 46) Mental and physical health-related quality of life and their associated factors among students of a comprehensive allied health institution. Khader A. Almhdawia,, Saddam F. Kanaanb, Yousef Khader , Zeid Al-Hourani, **Muhammed D. Al-Jarrah** , Fidaa Almomani and Mazin T. Alqhazo. *Work* 70 (**2021**) 63–73 DOI:10.3233/WOR-205226.
- 47) The non-pharmacological interventions in pain management of patients with Multiple Sclerosis: A systematic review and meta-analysis study. Hikmat Hadousha, Anoud Alawneh, Manal Kassab, Mohammad Al-Wardat, **Muhammed Al-Jarrah**. Accepted. *NeuroRehabilitation*. **2022**
- 48) Endurance exercise training upregulates myostatin expression and suppresses nuclear kappa B activation in a mouse model of Parkinson's disease. Nour Erekat. **Muhammed Al-Jarrah**. Accepted. *Veterinary World*. January 2022.

## **BOOK CHAPTERS:**

- 1) Stehno-Bittel, L., **Al-Jarrah, M.**, Williams, S. J., Diabetes in Skeletal Muscle Damage and Repair, P. M. Tiidus Ed, Human Kinetics, **2008, pp 135 - 145.**

## **PUBLISHED ABSTRACTS:**

**M. Al-Jarrah**, Lisa Stehno-Bittel, Vincent Lau. Treadmill exercise training effect on neuronal indicators in mice brain with chronic Parkinson's disease: Annual meeting of Neuroscience: **Brazil**, October, 2003.

**M. Al-Jarrah**, Lesya Novikiva, Irina Smirnova, Lisa Stehno Bittel. Exercise induces angiogenesis in the striatum of mouse with chronic parkinsonism. Combined Section Meeting: American Physical Therapy Association. San Diego, **California**, 2005

**M. Al-Jarrah**, Lisa Novikova, Lisa Stehno Bittel, Vincent Lau. Aerobic exercise training effect on the cardiorespiratory indicators of mouse model with MPTP/Probenecid induced parkinsonism. American Annual Neuroscience Meeting, **California**, 2004

**M. Al-Jarrah**, Irina Smirnova, Lesya Novikova, Lisa Stehno-Bittel, Vincent Lau. Exercise training effect on the neurotrophic factors in the brain of MPTP/probenecid induced parkinsonism. Kansas City Life Science Research Day. **Kansas City**, 2004, 2005.

**M. Al-Jarrah**, Lisa Novikova, Lisa Stehno Bittel, Vincent Lau. Mechanism of improved function with exercise in mouse model of chronic parkinson's disease. The University of Kansas Medical Center. Student Research Forum, 2004, 2005.

Mahmoud Nazzal and Muhammed **Al-Jarrah** "Relationship between functional independent measure (FIM) and Glasgow coma scale (GCS) regarding the rehabilitation outcomes of traumatic brain injuries. ISPRM (4<sup>th</sup> World Congress of the International Society of physical and Rehabilitation Medicine). Seoul , **Korea**, June, 2007

Mahmoud Nazzal and Muhammed **Al-Jarrah**. "Effect of constrained induced therapy rehabilitation on Barthel index in patient following stroke". 4<sup>th</sup> international Brain Injury Association for Physical Therapy and Rehabilitation Medicine". Lisbon **Portugal**, April, 2008.

**Muhammed Al-Jarrah**, Mohammed Jamous, Khalid Al Zailaey. Effect of endurance exercise training on angiogenesis of chronic/ progressive mouse model of Parkinson's disease. Czech Republic, Prague. International AD/PD conference, March 2009.

**Muhammed Al-Jarrah** , Mohammed Jamous , Yousef Al Hamadi. Ahed Al-Khateeb. The protective role of endurance exercise training against oxidative damage in the brain of rats with induced diabetes. 17th European Congress of Physical and Rehabilitation Medicine, Venice, **Italy**, May 2010.

Muhammed Al-Jarrah, Sakher Obaidat. Effect of treadmill exercise training on the functional outcomes after chronic stroke. 12<sup>th</sup> European Congress of Neurological Diseases. **Budapest, 2011**

**Muhammed Al-Jarrah.** Multidisciplinary approaches to management of low back pain. Gulf Medical University, International Conference on Management of low back pain. Ajman, UAE, **June 2013.**

**Muhammed Al-Jarrah.** How to design a rehabilitation protocol? SEPHA Conference, **Beirut, Lebanon, 2013.**

**Muhammed Al-Jarrah,** Rehabilitation for stroke and cerebral palsy in the Middle East. MESF Conference, **Jordan, 2014.**

#### **List of Courses delivered.**

**All these courses were delivered at graduate and undergraduate levels.**

- 1) Orthopedic Physiotherapy
- 2) Anatomy
- 3) Physiology
- 4) Neurorehabilitation
- 5) Pediatric Physiotherapy
- 6) Research methods
- 7) Physiotherapy clinics
- 8) Evidence based practice

#### **PROFESSIONAL AND SCIENTIFIC PRESENTATIONS./ International**

- American Physical Therapy Association, San Diego, California. Combined Section Meeting, 2005. **USA**
- Kansas City Life Science Research Day, Kansas City, KS, 2003, 2004, 2004. **USA**
- Physical Therapy Department. The University of Kansas. Departmental Seminar (2004-2006).
- Physical Therapy international Conference for Arab Schools of PT. **Egypt**, Cairo, April 2006

- First conference of PT Jordanian universities graduates, Amman – Jordan, April 2007
- Jordan- Italian first conference of prosthetic and prosthesis, Amman- Jordan, June 2007.
- Relationship between functional independent measure (FIM) and Glasgow coma scale (GCS) regarding the rehabilitation outcomes of traumatic brain injuries. ISPRM (4<sup>th</sup> World Congress of the International Society of physical and Rehabilitation Medicine). Seoul , **Korea**, June, 2007.
- Effect of constrained induced therapy rehabilitation on Barthel index in patient following stroke". 4<sup>th</sup> international Brain Injury Association for Physical Therapy and Rehabilitation Medicine". Lisbon **Portugal**, April, 2008.
- Effect of endurance exercise training on angiogenesis of chronic/ progressive mouse model of Parkinson's disease. Czech Republic, **Prague**. International AD/PD conference, March 2009.
- The protective role of endurance exercise training against oxidative damage in the brain of rats with induced diabetes. 17th European Congress of Physical and Rehabilitation Medicine, Venice, **Italy**, May 2010.
- Multidisciplinary approaches to management of low back pain. Gulf Medical University, International Conference on Management of low back pain. Ajman, **UAE, June 2013**.
- Muhammed Al-Jarrah. How to design a rehabilitation protocol? SEPHA Conference, **Beirut, Lebanon, 2013**.
- Muhammed Al-Jarrah, Rehabilitation for stroke and cerebral palsy in the Middle East. MESF Conference, **Jordan, 2014**.
- Current concepts in physiotherapy practice. **United Arab Emirates, 2015**. (Functional rehabilitation protocols: Essential things to consider.
- Accreditation for new established academic institutions. **Abu Dhabi. UAE, April, 2016**
- Curriculum Development Meeting. European Union. **Turkey, Ankara 2017**.

### Continuing Education Courses: **Presenter**

- 1) Differential diagnosis/ PT Syndromes of peripheral joints
- 2) Evaluation process for orthopedic PT syndromes
- 3) Spine: Common syndromes and their PT intervention
- 4) Post-surgical rehabilitation protocol for lower limbs
- 4) Post-surgical rehabilitation programs for upper limbs
- 5) Post-surgical rehabilitation program for spine surgeries
- 6) Orthopedic PT syndromes in pediatric clients

### **Teaching experience / Courses:**

- 1) Orthopedic courses at the master level at New York Intitute of Technology 2006-2009
- 2) Pediatric courses at the master level at New York Intitute of Technology 2006-2009.
- 3) Orthopedic courses at the BSc level at Jordan University of Science and Technology.
- 4) Pediatric courses at the BSc level at Jordan University of Science and Technology.
- 5) Neurorehabilitation courses on both MSc and BSc levels

### **National Grants**

- 1) The biological relationship between type II diabetes, endometrial cancer, and obesity in rats. 4.000 Thousand Dollars: Deanship of Research: Jordan University of Science and Technology, 2007
- 2) Effect of Endurance training on angiogenesis on mouse model of Parkinson's disease: Brain Study. 6000 Thousand Dollars: Deanship of Research: Jordan University of Science and Technology, 2008
- 3) Exploring the relationship between the expression of inducible nitric oxide synthase (iNOS) and heat shock protein (HSP-27) in the brain of rats with induced diabetes. 10.000 Thousand Dollars: Deanship of Research: Jordan University of Science and Technology, 2009
- 4) Effect of Endurance training on iNOS and nNOS on the striatum of mouse model of Parkinson's disease: Brain Study. 8.000 Thousand Dollars: Deanship of Research: Jordan University of Science and Technology, 2010

### **International Grants**

- 1) Middle East Stepping Forward project (MESF): Rehabilitation of adults CPs and stroke survivals in the Middle East countries: (160.000), **160 Thousand** Dollars starting on October of 2009 for three years. USAID Grant # : 20090165 CO-PI. PI in Jordan
- 2) Promotion of a physically active lifestyle in populations of teenagers with cerebral palsy in the Middle East (CP-PALS): (128.000); **128 Thousand** Dollars starting October of 2010 for three years and half. USAID Grant #: 2010166 CO-PI. PI in Jordan
- 3) Gaining and Improving Function Training in Cerebral Palsy (GIFT). European Commission (EC). Grant proposal submitted. PI and leader of the project for several Mideterian countries.

- 4) Prevention of fall in elderly. USAID grant. Application submitted. PI in Jordan. **700 Thousand** Dollars.

### **Master Thesis Supervision**

- 1) The biological relationship between type II diabetes, endometrial cancer, and obesity in rats. Published work.  
- Student: Hasan Ahmad Mohammed Asiri, December, 2008
- 2) Effect of Endurance training on angiogenesis on mouse model of Parkinson's disease: Brain Study. Published work  
- Student: Khalid Rashid Al-Zaailay, December, 2008
- 3) Exploring the relationship between the expression of inducible nitric oxide synthase (iNOS) and heat shock protein (HSP-27) in the brain of rats with induced diabetes.  
- Student: Yousef Hammadi. Published work.
- 4) Endurance exercise training downregulates the expression of nitric oxide synthase in the brain of mouse with chronic Parkinson's disease. Heyam Obaidat, 2011. Published work.
- 5) Association of Adiponectin and rs1501299 of the *ADIPOQ* Gene with Prediabetes in Jordan. Student: Fahim Al Maghlees. Published work.

### **PhD Thesis Supervision**

- 1) Association between physical activity, health care quality of life, regimen adherence, and glycemic control in Jordanian adolescence with type I diabetes Jawarneh. The University of Texas Health Science center at Houston, 2018.

### **Professional Activities and memberships (Accreditation Committees):**

1. Member, Higher Council of Jordan University of Science and Technology, 2006- 2007
2. Member, Council of faculty of Applied Medical Sciences, 2007-2011
3. Head. Scientific Committee of Jordanian Physiotherapy Association.
4. Head. Certificates Evaluation Committee. Faculty of Applied Medical Sciences. JUST.
5. Head. Committee of Special Accreditation of physiotherapy program. Faculty of Applied Medical Sciences. JUST.
6. Member. Ministry of Higher Education Board of Accreditation of Physical therapy Programs.
7. Head of Special Accreditation Committee for Jordan University assigned by the Ministry of Higher Education in Jordan.
8. Member. Study Plans and Curriculums Committee. Faculty of applied Medical sciences. JUST

## **COMPUTER KNOWLEDGE**

- Computer Software Applications: Microsoft Office, SPSS statistical package, Adobe Photoshop, and internet applications.