

Accepted Abstracts



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Mongolian National University of Medical Sciences faculty attitudes towards inter-professional education, teamwork and their barriers

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Background: Faculty development is, therefore important to ensure that teachers and trainees are well prepared to assume their responsibilities as educators. The current and proposed effort to train more doctors, nurses, midwives and other health professionals puts an extra burden on institutions and their staff. More educators are in need and their functions must be made more attractive. Incentives such as access to faculty development are part of the response to bridge the gap between teaching and clinical work by allowing interaction between monitoring and coaching, relationships and networks, organizations systems and cultures and tasks and activities.

Objective: This study sought to understand the attitudes held by faculty at one academic Mongolian National University of Medical Sciences (MNUMS) concerning Inter-Professional Education (IPE) and teamwork. This MNUMS will to experience very modest progress towards IPE implementation. The study is based upon previous work by Curran et al. (2007) that asked faculty to rate their attitudes towards inter-professional health care teams, IPE and inter-professional learning in an academic setting.

Methods: A descriptive, cross-sectional design was used to survey participants from a convenience sample of faculty at one academic MNUMS located within a large university in the Mongolia. The colleges represented were medicine, dentistry, nursing, pharmacy, public health, biomedicine and traditional medicine.

Results: The attitude score was determined by summing the responses to 14 statements. The mean score (\pm SD) for all respondents was 4.1 (\pm 0.10). Highly scored benefits included more efficient care, better understanding of the work of other health professionals and fostering communication. The attitude score was determined by summing the responses to 15 statements. The mean score (\pm SD) for all respondents was 3.83 (\pm 0.10). Highly scored benefits of IPE were "Patient would ultimately benefit if health care students worked together to solve patient problems" and "Learning between health care students before qualification would improve working relationships after qualifications". The attitude score was determined by summing the responses to 13 statements. The mean score (\pm SD) for all respondents was 3.41 (\pm 0.10). The most highly scored benefits of IPE in the academic setting "Inter-professional efforts require support from campus administration" and "Inter-professional efforts weaken course content". The mean score (\pm SD) for all respondents was 1.26 (\pm 0.64). These barriers included lack of reward for faculty, problems with schedule/calendar, classroom size, lack of administration support, lack of received value, turf battles, student acceptance, lack of financial resources, faculty attitudes and rigid curricula.

Conclusion: Therefore, we need to recognize that the knowledge level in general professional competency is not a critical barrier to implementing IPE.

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Evidenced-based practice: The art of the practice of nursing

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The Institute of Medicine called for the use of evidenced-based practice approaches to care in 2001 in response to a national initiative to provide a higher standard of healthcare. In 1999 it was estimated that up to 268 people a day in the United States died as a result of medical errors, there was a call to action. The use of scientific knowledge to guide all healthcare practices became the new standard and expectation both by the experts and soon thereafter by the recipients of care. Bringing evidenced-based practice to bedside implementation did not arrive with its own blueprint and the nursing profession has struggled for several years on how to successfully integrate these processes into useable form. Transitioning deeply rooted practices to the newer approaches requires the leader to participate in the journey, shoulder to shoulder, point of care work, demonstrating the possibility and spreading the good news. Healthcare workers are facing many challenges in their daily quest to deliver good care in today's dynamic healthcare environment, if we are to expect them to conform to new practices we are going to have to pave the way and lay the foundation piece by piece. A description on a successful bedside report implementation project on a level 111 NICU brings forth success and failures and missteps that became a huge learning curve and emblazoned a passion to continue in this effort. A notable missing component that resulted in the profession being underserved in this area was the identification of individuals with the skills, knowledge and passion for the work. How is this work going to be completed? There is a recent increase in Doctor of Nursing Programs to facilitate the education on evidenced-based practice implementation. That is a start; bringing evidence-based practice to fruition at the bedside requires time, talent and team effort. The work is possible, plausible and paramount for optimal healthcare delivery in the 21st century.

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Necrotizing enterocolitis in a preterm infant newborn and role of feeding, an update: A clinical case report

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It is a clinical case presentation of a male preterm infant newborn (+31 weeks) who was delivered in our hospital and transferred to our NICU because of prematurity, Very Low Birth Weight (VLBW) and need to respiratory support. Baby shortly undergo Necrotizing Enterocolitis (NEC) on 5th day of life shortly after start of expressed milk feeding, which was early detected by use of Near Infrared Abdominal Spectroscopy (NIRS). Baby was deteriorated clinically in a couple of hours and undergone intestinal perforation with peritonitis, so, abdominal exploration surgery with intestinal resection and end to end anastomosis was done urgently. Baby improved gradually and early feedings was started and gradually increased up to full feedings with use of Human Fortified Milk (HMF), probiotics and prebiotics. The study stated the evidence-based feeding strategies guidelines for necrotizing enterocolitis among very low birth weight infants and role of trophic feedings, probiotics, prebiotics and micronutrients in prophylaxis, prevention and management of NEC. Prematurity is the single greatest risk factor for NEC and avoidance of premature birth is the best way to prevent NEC. The role of feeding in the pathogenesis of NEC is uncertain, but it seems prudent to use breast milk (when available) and advance feedings slowly and cautiously. NEC is one of the leading causes of mortality and the most common reason for emergent GI surgery in newborns. NEC remains a major unsolved medical challenge, for which no specific therapy exists and its pathogenesis remains controversial. A better understanding of the pathophysiology will offer new and innovative therapeutic approaches and future studies should be focused on the roles of the epithelial barrier, innate immunity and microbiota in this disorder. Bioinformatics modeling is a new emerging strategy aimed at understanding the dynamics of various inflammatory markers and their application in early diagnosis and treatment.

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Safety culture 2018

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Safety in healthcare has received substantial attention worldwide. Rapid change in healthcare has mandated greater attention to safety, which is essential for quality patient care, employee welfare and morale. Safety is a condition or state of being resulting from the modification of human behavior and/or designing of the physical environment to reduce hazards, thereby reducing the chance of accidents. The biggest challenge to moving toward a safer health system is changing the culture from one of blaming individuals for errors to one in which errors are treated not as personal failures, but as opportunities to improve the system and prevent harm. Promoting a culture of safety has become a pillar of the patient safety movement. Patient safety is the avoidance and prevention of patient injuries or adverse events resulting from the processes of health care delivery. Patient safety also means prevention of harms to patients. Organizations with a positive safety culture are characterized by communications founded on mutual trust, by shared perceptions of the importance of safety and by confidence in the efficacy of preventive measures. Two important concepts affect the culture of safety: Error reporting and disclosure of errors. The acceptance of and means by which errors are identified, reported and communicated to those involved or affected, have much to do with how well safety is ingrained in the healthcare organization's culture. Most patient injuries are due to system failure. Most medical errors result not from the errors of individuals, but from numerous latent errors that exist within complicated systems of care delivery. This approach to medical error is well supported and consistent with historical efforts in healthcare quality improvement. The goal to develop a positive culture of safety has tremendous potential to benefit patients.

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Real-time MRI-guided delivery of AAV2-AADC gene therapy for parkinson's disease and AADC deficiency in children

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Gene transfer technology can correct genetic mutations in the brain. Neuro gene delivery via direct intrapranchymal injections of Adeno-Associated Viral (AAV) vectors is a locally administered treatment that requires accurate delivery to maximize safety and efficacy. Gene therapy using Adeno-Associated Virus (AAV2) carrying the Amino Acid Decarboxylase (AADC) gene has the potential to improve the clinical response to levodopa when infused into the putamen of Parkinson's Disease patients (PD) or to generate dopamine production in children with AADC gene mutation after direct administration to substantia nigra and ventral tegmental area. Prior clinical trials have shown possible benefit but may have been limited by inadequate anatomical vector delivery or off-target vector distribution. Using intraoperative MRI and co-infusing the vector with gadoteridol now allows real-time visualization of infusions. Analysis of bilateral MRI-guided putaminal infusions for 15 Parkinsonian patients and 3 children with AADC deficiency in an ongoing Phase Ib/2 AAV2-AADC clinical trial was performed. T1-weighted images were used to calculate coverage of the putamen. The infusion strategy evolved during the trial to maximize coverage of the putamen by modifying the cannula design, increasing the infusion volumes and altering the cannula trajectories. Real-time MRI-guided delivery allows various infusion strategies to be employed to maximize target coverage. MR-guided infusions of the vector into the midbrain of AADC-deficient children resulted in 100% coverage of target structures. In both PD and AADC deficient children AAV-AADC gene transfer was able to significantly increase clinical outcome as manifested by 4 hours increase in ON time in PD patients at 12 months and increase of motor performance in AADC-deficient children. In addition, significant reduction of oculomotor crises was observed as well. These results show that advances in surgical techniques have markedly improved vector delivery and that AAV2-AADC has strong therapeutic potential in both indications presented here.

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Inspiratory muscle training in children and adolescents living with neuromuscular diseases: A pre-experimental study

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People with Neuromuscular Diseases (NMD) have high risk of morbidity and mortality caused by underlying respiratory muscle weakness and an inability to cough effectively. Respiratory muscle training aims to preserve or improve respiratory muscle strength, delay respiratory morbidity onset, optimize ventilation and ultimately improve Health-Related Quality of Life (HRQoL). Inspiratory Muscle Training (IMT) among children and adolescents with NMD is controversial, owing to differences in pathophysiology and potential risk of muscle damage in some conditions. Despite reports of potential benefits, there is insufficient evidence to guide clinical practice regarding the use of IMT in this sub-population. A pre-experimental, observational pre-test post-test study was conducted to determine the effect of a six-week IMT program on pulmonary function, Peak Expiratory Cough Flow (PECF), inspiratory muscle strength (Pimax), upper limb function and coordination (using the Motor Function Measurement (MFM) scale), adverse events and HRQoL using the PedsQL. Eight participants (n=8 boys; mean age 12.71±3.53 years) with a variety of NMD were included. Training consisted of 30 breaths, twice daily, five days a week, for six weeks with an electronic threshold device (Power breathe K3, HaB International Ltd, Southam, UK). There were no significant changes in spirometry, PECF or HRQoL. However, maximum inspiratory pressure (Pimax) (p<0.01), strength-index (p<0.02), peak inspiratory flow (p<0.02) and MFM (p<0.03) improved significantly from pre- to post intervention. Overall patient satisfaction with the IMT program was extremely high, with a mean of 9.13±1.73 out of a possible score of 10. No adverse events occurred. This study suggests that short term IMT may improve inspiratory muscle strength as well as improving upper limb function and coordination. IMT seems to be safe and effective in this sub-population, however randomized controlled trials are needed to determine the mid and long-term effect of IMT in children and adolescents with NMD.

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The expression of β -endorphin in the periaqueductal gray by exercise

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Introduction: It is reported that excessive sports increase β -endorphin in the serum, but there are few reports about the expression of the opioid in the brain. Therefore, we investigate a change of β -endorphin secreted in the rat brain after exercise.

Method: With male Wistar rats, we investigated the expression of β -endorphin in the periaqueductal gray (DM: Dorsomedial, DL: Dorsolateral, L: Lateral, VL: Ventrolateral) immune histologically. The conditions are control group (only in a rota-rod treadmill), high-speed exercise group (11 m/min), low-speed exercise group (6.6 m/min). They exercise twice a day 7 days for 30 minutes. After 7 days, the corticosterone density in the rat blood was measured. The brain tissue of 20 μm was immune stained by the free-floating method using an antibody of β -endorphin. Immuno-stained section was photographed by a digital camera and immno positive amount in a square of 100 μm was determined by using software.

Result: The median of corticosterone density was control group 294 $\mu\text{g}/\text{ml}$, high-speed group 349 $\mu\text{g}/\text{ml}$ and low-speed group 345 $\mu\text{g}/\text{ml}$. The significant difference was recognized between control and both exercise group. The median of endorphin expression in the periaqueductal gray is 27.9 μm^2 , 51.0 μm^2 , 23.5 μm^2 . The significant difference was recognized between high-speed group and low-speed group or control group. By the part distinction, the expression of β -endorphin in DM and DL increase in particular when rats ran in high-speed.

Conclusion: The present findings suggest that stress after exercise in the rata-rod treadmill might increase regardless of the speed. However, the sedative effect is strong at vigorous exercise.

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Temporomandibular joint dysfunction in patients with stroke

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Statement of the Problem: Although stroke and stroke related symptoms had been investigated in wide spectrum, yet variety of knowledge stands behind the curtain to be found. We consider that the Temporomandibular Joint Dysfunction (TMJD) is one of the symptoms that mentioned above due to stroke related outcomes such as orofacial dysfunction, facial paralysis and mastication problems. Despite the orofacial symptoms due to stroke had been investigated separately these symptoms are originated from one system entitled with stomatognathic system. From this point of view our aim was to assess TMJD in patients with stroke.

Method: Total 100 participants, 50 healthy and 50 who had stroke were recruited into this study. Digital calliper and algometer were used in order to assess temporomandibular joint range of motion and masticatory muscle pressure pain threshold. Labial commissure angle measurement was used for assessing facial paralysis severity. Fonseca questionnaire was used for TMJD assessment and categorization. In addition, dominant mastication shift was measured by the question that asks the pre-post stroke dominant mastication side.

Findings: In intergroup comparison significant decrease was found in all temporomandibular range of motion parameters in favor of stroke group. Despite the fact that no significant difference was found between groups for the pain threshold in masticatory muscles except for middle part of the left temporalis muscle, values were higher in healthy group. As a result of intergroup examination of labial commissure angle degree, Fonseca questionnaire score, it was found that labial commissure angle and Fonseca questionnaire scores were higher in stroke group. Intragroup examination of stroke patients showed that dominant mastication side shift was seen in stroke patients.

Conclusion: It was concluded that, TMJD prevalence was higher in stroke group compared to healthy group and use of modalities specific to TMJD treatment would be beneficial.

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Upper limb rehabilitation in facioscapulohumeral dystrophy patients

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Facioscapulohumeral Dystrophy (FSHD) sufferers live a long life with disability. Symptoms may develop in early childhood and weakness usually noticeable in the teenage years with 95% of affected individuals manifesting disease by age 20 years. The disorder impacts on the upper extremity and torso, impacting negatively on the muscle mass, shoulder mobility and functional tasks. Consequently, chronic disuse of the shoulder negatively impacts independence of sufferers, prospects of employment and staying at work. At present there is no known cure and knowledge regarding the mechanisms underpinning FSHD is not sufficient to halt the progression of the disease via pharmacological interventions or gene therapy. Surgical interventions are used to improve scapular stabilization but long-term effect on disease progression is limited. The aim of this exercise was to understand views of patients for compliance with exercise programs and understand the barriers for regular exercise. This is followed by a pilot of testing arm cycling as potential rehabilitation method. We received 232 responses from the online survey. 92.6% responders are in agreement that upper limb exercise is necessary as upper limb dysfunction impacts daily living in 86.9% patients. Arm cycling was considered to be a feasible exercise by 57.1%. The focus group session echoed the need for home-based exercise program as attending a regular gymnasium was not entertained by patients. In this particular group of patients, pain, fatigue and lack of motivation were additional barriers identified for compliance with exercise programs. Pilot study of arm cycling showed that patients with different level of function were able to perform cycling at cadence and resistance to improve muscle function. There is a need for upper limb rehabilitation and arm cycling offers a potential method to enhance muscle function, but its effectiveness is yet to be shown.

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Building health research capacity in Africa for UHC: The profile of stroke in Jos, North Central Nigeria

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Background & Aim: Stroke is the second leading cause of death worldwide. Stroke mortality has been shown to be higher in blacks in multiracial studies; it is also a very important cause of disability with its attendant deterioration in the quality of life in survivors. The profile of stroke in North Central Nigeria has been sparsely described despite the fact that it constitutes about 50 to 60% of neurological admission in this part of the world. Aim of the study is to determine the risk factors associated with stroke, assess the case fatality 90 days post stroke, determine the bad prognostic factors of stroke and assess the sensitivity and specificity of clinical sub-typing of stroke using the WHO and Siriraj stroke scoring tools.

Method: A longitudinal cohort study with 90 days follow up for secondary outcome was carried out on stroke patients admitted into the Neurology Unit of Jos University Teaching Hospital over a 2-year period, September 1st, 2016 to August 31st, 2018.

Result: A total of 246 stroke patients were admitted during the study period. Males were 131 (53.3%) and females 115 (46.6%) with an age range of 59.5±13.1 for males and 56.7±14.2 for females. Hypertension (81.7%), obesity (80.9%), dyslipidemia (54.5%), alcohol consumption (24.8%), carotid plaques (19.5%), cardiac disease (19.1%) and diabetes mellitus (18.5%) were the commonest risk factors for stroke. The 90 days fatality for stroke was 22%; however, 37% became disabled and unable to carry out activities of daily living without support. Significant predictors of mortality and morbidity were coma, elevated glycosylated hemoglobin, cardiac disease, HIV infection and high National Institute of Health Stroke Score (NIHSS). WHO clinical stroke sub typing showed a sensitivity of 54.3% and a specificity of 86.3% while Siriraj has a sensitivity of 87.9% and specificity of 84.9% for ischemic stroke, however, for hemorrhagic stroke, WHO sub typing revealed a sensitivity of 86.3% and a specificity of 54.3% while Siriraj was found to have a sensitivity of 84.9% and specificity of 87.9%, showing that Siriraj is a better tool for stroke categorization for appropriate management in areas where neuroimaging are either not readily available or not affordable.

Conclusion: Stroke is a major cause of mortality and morbidity in North Central Nigeria. Community screening for risk factors should be pursued aggressively and identified risk factors managed promptly in order to reduce the burden of this pandemic. Siriraj stroke sub-typing can be used in resource limited setting like ours where neuroimaging facilities are either not available or are too expensive.

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