Abstract #: *1.002_NEP*

Working with neuro-rehabilitation programs to address oral health in India

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Background: Several studies indicate high incidence and severity of oral diseases in individuals with neurologic impairments, including those due to traumatic brain injuries (TBI). Close to 1.6 million TBIs are sustained annually in India, representing 16% of the global TBI burden. Although oral condition is central to quality of life, including ability to eat, speak and express emotion, oral health is not systematically addressed in this population. This qualitative work was designed to identify best practice methods of integrating oral health and healthcare in neuro-rehabilitation systems in India by assessing the structure of the system and professional and lay caregiver oral health needs. These data will be used to inform training and policy designed to integrate oral health in existing systems of care.

Methods: Ten semi-structured key informant interviews with professional caregivers (physical therapists/occupational therapists/nurses) and environmental scans of three programs were conducted to assess the structure of the neuro-rehabilitation system. Structured interviews were conducted with a convenience sample of 46 lay caregivers of patients receiving care at neuro-rehabilitation programs in New Delhi and Jodhpur. Interviews were transcribed, coded, and analyzed for emerging themes.

Findings: 89% of lay caregivers are female, 17% have received oral health education, and 67% find providing daily oral care difficult; 63% of patients have never seen a dentist due to low caregiver perceived need. Professional caregivers recognize the importance of oral health but do not have the skills to address it, and policies around delivery of oral health and healthcare are not comprehensive. Thematic evaluation suggests that oral health can be integrated into neuro-rehabilitation programs through: co-delivery of neuro-therapy and daily oral care, and inclusion of oral health risk assessment in intake/ interval patient evaluations and patient referral systems.

Interpretation: Integration of oral health in existing neuro-rehabilitation systems can serve as a sustainable model of oral care delivery with high reach, but lay and professional caregivers must be trained and incentivized. The data will be used to inform development and evaluation of a training program for lay and professional caregivers.

Abstract #: *1.003_NEP*

Diabetes and tuberculosis interaction in Kazakhstan

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Background: The global increase in diabetes prevalence highlights an urgent need to address diabetes interaction with tuberculosis (TB) prevention and treatment. In Kazakhstan where multi-drug resistant TB (MDR-TB) is serious, an estimated 26% of new TB cases have MDR-TB. Studies show that for individuals with TB, co-occurring diabetes is often associated with TB treatment failure which may lead to MDR-TB. The factors associated with the synergistic relationship between TB and diabetes is understudied in Kazakhstan. The aim of this paper is to examine factors associated with the co-occurrence of diabetes and TB in Kazakhstan using data from a population based study of the Social, Environmental and Genetic Factors Determining Susceptibility to Tuberculosis project.

Methods: Using a cross sectional study design, we collected data from 1600 participants consisting of TB positive individuals, household controls and community controls recruited from June 2012 to May 2014 from four regions in Kazakhstan: Almaty city, Almatinskaya oblast (province), Kyzylordinskaya oblast, and Kostanayskaya oblast. For this analysis, we focused on the TB positive individuals and used multivariate analysis to test the prevalence of co-occurring TB and diabetes as well as the associated multilevel risk factors.

Findings: Of the 562 TB positive individuals 7.1% report having concomitant diabetes. A significant proportion of new TB positive cases were associated with both diabetes and smoking — accounting for 28%. We found that major risk factors associated with co-occurring TB and diabetes include: age, education and living in a rural area.

Interpretation: To our knowledge, this is the first study on the co-occurrence of TB and diabetes in Kazakhstan. The high prevalence of co-occurring TB and diabetes has implications on screening index or TB positive cases as well as individuals with diabetes. National TB programs in countries like Kazakhstan should move towards integrated screenings for both diseases given the increasing prevalence of diabetes and its negative effects on TB treatment and management. Integrated screenings for both TB and diabetes in Kazakhstan is not only urgent but must address risk factors such as age, education and rural living. More evidence based research on co-occurring TB and diabetes is needed in high TB burdened settings.

Abstract #: *1.004_NEP*

Hematological abnormalities among patients with systemic Lupus Erythematosus at Kenyatta National Hospital, Nairobi

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Background: Systemic Lupus Erythematosus (SLE), an autoimmune disease characterized by multi-organ failure, has been increasingly identified in clinics in African settings. Hematological abnormalities have been demonstrated to be common among SLE

patients in Western countries. Researchers in Nairobi, Kenya have sought to examine these parameters among a cohort of African patients at Kenyatta National Hospital.

Methods: Participants in the study were recruited from the Renal and Rheumatology Clinics of Kenyatta National Hospital. Patients were required to have an active diagnosis of SLE, an absence of concurrent diseases, and at least six months of clinical follow-up. 65 patients were recruited for the study; of these, 62 patients were females and 3 were male. A study questionnaire was administered among the patients for self-reporting of current medications and demographic data, including gender, age, age at diagnosis, occupation, education level and residency. While present in the clinic, venupuncture was performed for CBC/PBF/Reticulocyte values and ESR.

Findings: Out of the 65 patients recruited for the study, 28 (43.1%) had anemia, 17 (26.2%) had leukopenia, 6 (9.2%) had leukocytosis, 13 (20%) had thrombocytopenia, and 8 (12.3%) had thrombocytosis. 25 patients (38.5%) had no abnormalities, compared to 38 patients (61.5%) that presented with at least one hematological abnormality. 24 patients (36.9%) patients presented with lower levels of one cell line only. Another 14 patients (21.5%) presented with lower levels of multiple cell lines, and 3 patients (3%) presented with lower levels of all three cell lines (pancytopenia). Hematological abnormalities were the second most common clinical presentation of SLE, second only to arthritis/arthralgia.

Interpretation: The majority of patients studied had hematological abnormalities; among these patients, anemia was the most common clinical presentation. Overall, hematological abnormalities were the second most common clinical feature of patients with SLE. Levels of anemia and thrombocytopenia were consistent with what has been demonstrated in Western countries. Comparing these values with similar studies in other African settings may guide future research.

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Pediatric emergency medicine curriculum in Armenia: evaluating knowledge retention

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Background: In October 2014, a multidisciplinary team of instructors including emergency physicians, pediatric surgeons, emergency nurses and paramedics from the United States travelled to Yerevan, Armenia to teach a 4-day course on pediatric emergency care (PEC). Upon completion of the course, participants received continuing medical educations credits. 52 physicians participated in the course: twenty-four physicians working in the pre-hospital environment, sixteen general pediatricians and twelve pediatric critical care specialists. The mean test scores improved significantly, with mean pre-course score of 50.3%±0.11 SD and mean post-course score of 77.3%±0.13 SD (p <0.0001). 98% of the participants reported that as a result of this course, they would introduce a change in their practice. This study aimed to evaluate knowledge retention at the nine-month follow up, among physicians who participated in the course.

Methods: In July 2015, the participants were invited to anonymously complete the same 45-question post-test taken at the completion of the course. The tests were collected in sealed envelopes. Descriptive analysis was performed on the data. This study qualified for exemption by the IRB at Virginia Commonwealth University.

Findings: Of the 52 physicians, 36 completed the knowledge retention test, a response rate of 69%. The mean score was 68.4% ±0.11 SD. This represents an 8.9% decline in mean test scores between October 2014 and July 2015; nevertheless, the retention mean test score was 18.1% higher than the mean pre-course test score.

Interpretation: We sought to assess the long-term knowledge retention of physicians in Yerevan, Armenia who received PEC education. A comparison of scores from the pre-CME training, post-CME training and knowledge retention tests confirms that, although participants' knowledge of PEC declined between October 2014 and July 2015, PEC knowledge 9-months following CME training remained higher than baseline. Future courses should be designed to take this knowledge decay into account and to structure review sessions at adequately spaced intervals such that to ensure preferential knowledge retention. Further research is needed to determine whether healthcare providers' education in Yerevan, Armenia improves patient outcomes and practice behaviors.

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From well-meaning to well being: bridging the gap in mental health awareness in Tanzania

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Program/Project Purpose: In April 2013, a building collapsed on a children's playground in Dar es Salaam, Tanzania killing 36 people and trapping over 60, some of whom were children playing in the playground. This tragic event highlighted a lack of capacity in the community and the country at large, to know how best to support those living with mental and emotional distress. A pilot project was created as a way to address this gap and build capacity within already existing community structures to create awareness about mental health, its impact upon all aspects of life, and a support network for the community.

Structure/Method/Design: The pilot project took place in the community most affected by the building collapse in Dar es Salaam. 18 socially active volunteers from within the community were vetted and trained using the Mental Health First Aid England curriculum. The volunteers formed a group for mental wellbeing within the community to increase awareness and reduce the stigma attached to mental health disorders and to increase access to professional services, such as therapists and psychiatrists. Given that mental health services are scarce in Tanzania, the group also aimed to increase awareness of positive self-help strategies to aid quicker recovery and to provide support to those suffering from mental health disorders.