

National Documentation Centre

HEALTH AND FAMILY
WELFARE ABSTRACT

OCT- DEC 2019

2019

The National Institute of Health and Family
Welfare, Baba Gangnath Marg, Munirka, New
Delhi-110067

Content

Subject	Entry No.
1. Ageing	1-10
2. Contraception	11
3. Demography	12-16
4. Diseases	17-28
5. Family Planning	29-30
6. Fertility	31-32
7. Healthcare	33-34

Ageing

1. The Better Assessment of Illness Study for Delirium Severity: Study Design, Procedures, and Cohort Description. *Hshieh T.T., Fong T.G, Schmitt E.M, Marcantonio E.R, D'Aquila M.L, Gallagher J, Xu G, Guo Y.R, Abrantes T.F, Bertrand S.E, Jones R.N, Inouye S.K, for the BASIL Study Group.* *Gerontology*, Vol 65, No.1, 2019, Pp-20-29

Background/Objectives: To describe the design, procedures, and cohort for the Better Assessment of Illness - (BASIL) study, which is conducted to develop and test new delirium severity measures, compare them with existing measures, and examine related clinical outcomes. Methods: Prospective cohort study with 1 year follow-up of study participants at a large teaching hospital in Boston, Massachusetts. After brief cognitive testing and the Delirium Symptom Interview, delirium and delirium severity were rated daily in the hospital using the Confusion Assessment Method (CAM) and CAM-Severity score, the Delirium Rating Scale-Revised-98 (DRS-R-98), and the Memorial Delirium Assessment Scale (MDAS). Other key study variables included comorbidity, physical function (basic and instrumental activities of daily living [ADL]), ratings of subjective health and well-being, and clinical outcomes (length of stay, 30 day rehospitalization, nursing home admission, healthcare utilization). Follow-up interviews occurred at 1- and 12-month with patients and families. In 42 patient interviews, inter-rater reliability for key variables was assessed. Results: Of 768 eligible patients approached, 469 were screened and 352 enrolled, yielding an overall study response rate of 67% for potentially eligible participants. The mean participant was 80.3 years old (SD 6.8) and 203 (58%) were female. The majority of patients were medically complex with Charlson Comorbidity Scores ≥ 2 (192 patients, 55%), and 102 (29%) met criteria for dementia. Inter-rater reliability assessments (n = 42 pairs) were high for overall ratings of presence or absence of delirium by CAM ($\kappa = 1.0$), delirium severity by DRS-R-98 and MDAS (weighted kappa, $\kappa = 1.0$ for each) and for ADL impairment ($\kappa = 1.0$). For eligible participants at each time point, 278 out of 308 (90%) completed the 1-month follow-up and 132 out of 256 (53%) have completed the 12-month follow-up to date, which is still in progress. Among those who completed interviews, there was only 1–3% missing data on most major outcomes (delirium, basic ADL, and readmission). Conclusion: The BASIL study presents an innovative effort to advance the conceptualization and measurement of delirium severity. Unique strengths include the diverse cohort with complete high quality data and longitudinal follow-up, along with detailed collection of multiple delirium measures daily during hospitalization.

Keywords: Delirium, Delirium Severity, Rating Study, Design Cohort, Description Methods, Data Quality

2. Cognitive Change at the End of Life in Nursing Home Residents: Differential Trajectories of Terminal Decline. *Hülür G, Wolf H, Riese F, Theill N.* *Gerontology*, Vol 65, No.1, 2019, Pp-57-67

Background: Research on terminal decline has widely documented that cognitive performance steeply declines with nearing death. To date, it is unclear whether these changes are normative, based on pathologies associated with (preclinical) dementia, or both. Objectives: We analyzed heterogeneity in trajectories of terminal cognitive change in Swiss nursing home residents with the objective of examining whether terminal change is normative or whether one or multiple subgroup(s) with relative stability exist. Methods: We performed a longitudinal analysis based on routine assessments with the Resident Assessment Instrument – Minimal Data Set in 341 nursing homes between 1998 and 2014. In sum, we used 143,052 observations from 30,054 residents (69% women, average age at death 87 years) in the last 3 years of life. We analyzed trajectories of the Cognitive Performance Scale (CPS) score with latent class growth curve models and examined sociodemographic factors (age at death, sex, marital status, prior living situation) as well as functional and mental health (Activities of Daily Living Index and Depression Rating Scale) and dementia diagnosis as correlates of group membership. Results: We identified three distinct classes based on longitudinal trajectories of the CPS score. In the first group (transition from no to mild impairment, 27%), cognitive impairment increased with time to death (linear and quadratic), but remained at relatively mild levels at all times. The trajectories of the second group (transition from moderate to severe impairment, 43%) were characterized by linear and quadratic changes across time to death. The trajectories of the third group (severe impairment, 30%) were characterized by the lowest amount of linear increase across all groups and no quadratic increase indicating no accelerated change. Better functional health and absence of a dementia diagnosis predicted less impairment. Fewer depressive symptoms were associated with low as opposed to moderate or severe, but also severe versus moderate impairment. Conclusion: Our findings suggest that the majority of residents experience terminal change, with the exception of those at already high levels of impairment. Furthermore, late-life cognitive change is related to functional and mental health.

Keywords: Terminal Decline, Cognitive Performance Scale, Latent Class Growth Curve Analysis, Longitudinal

3. Transferability and Sustainability of Motor-Cognitive Dual-Task Training in Patients with Dementia: A Randomized Controlled Trial. *Lemke N.C, Werner C, Wiloth S, Oster P, Bauer J.M, Hauer K. Gerontology, Vol 65, No.1, 2019, Pp-68–83*

Background: Specific dual-task (DT) training is effective to improve DT performance in trained tasks in patients with dementia (PwD). However, it remains an open research question whether successfully trained DTs show a transfer effect to untrained DT performances. Objective: To examine transfer effects and the sustainability of a specific DT training in PwD. Methods: One hundred and five patients with mild-to-moderate dementia (Mini-Mental State Examination: 21.9 ± 2.8 points) participated in a 10-week randomized, controlled trial. The intervention group (IG) underwent a specific DT training (“walking and counting”). The control group (CG) performed unspecific low-intensity exercise. DT performance was measured under three conditions: (1) “walking and counting” (trained); (2) “walking and verbal fluency” (semi-trained), and (3) “strength and verbal fluency” (untrained). Outcomes evaluated at baseline, after training, and 3 months after the intervention period included absolute values for the motor and cognitive performance under DT conditions, and relative DT costs (DTCs) in motor, cognitive and combined motor-cognitive performance. Results: The IG significantly improved DT performances in the trained condition for absolute motor and cognitive performance and for motor, cognitive, and combined motor-cognitive DTCs compared to the CG ($p \leq 0.001-0.047$; $\eta^2 = 0.044-0.249$). Significant transfer effects were found in the semi-trained condition for absolute motor and partly cognitive performance, and for motor but not for cognitive DTCs, and only partly for combined DTCs ($p \leq 0.001-0.041$; $\eta^2 = 0.049-0.150$). No significant transfer effects were found in the untrained condition. Three months after training cessation, DT performance in the trained condition was still elevated for most of the outcomes ($p \leq 0.001-0.038$; $\eta^2 = 0.058-0.187$). Training gains in the DT performance in the semi-trained condition were, however, not sustained, and no significant group differences were found in the DT performance in the untrained condition after the follow-up. Conclusion: This study confirmed that specific DT training is effective in improving specifically trained DT performances in PwD and demonstrated sustainability of training-induced effects for at least 3 months. Effects were partially transferable to semi-trained DTs but not to untrained DTs. With increasing distance between trained and untrained DTs, transferability of training effects decreased.

Keywords: Dementia Attention, Dual Tasking, Exercise Training, Transfer Effects, Rehabilitation

4. Effects of Driving Skill Training on Safe Driving in Older Adults with Mild Cognitive Impairment. *Shimada H, Hotta R, Makizako H, Doi T, Tsutsumimoto K, Nakakubo S, Makino K. Gerontology, Vol 65, No.1, 2019, Pp-90–97*

Background: Driving cessation is strongly associated with adverse health outcomes in the older adults. Although there were numerous documentations of driving rehabilitation in disabled adults, the effects of interventions on safe driving were not clear in older adults with cognitive impairment who had low driving skills. Objective: This randomized controlled trial was designed to determine whether a safe driving skill program consisting of classroom and on-road training could enhance driving performance of older drivers with cognitive impairment in Japan. Methods: A total of 160 community-living older drivers participated in the randomized controlled trial with blinded endpoint assessment. Participants randomized to intervention underwent 10 1-h classroom sessions and 10 1-h on-road sessions focused on common problem areas of older drivers. Controls received 1 classroom education. On-road driving performance was assessed by certified driving school instructors in a driving school. The participants carried out dynamic vision and cognitive performance tests. Results: One hundred and forty-six (intervention group, $n = 71$) subjects completed the 3-month follow-up. Mean adherence to classroom-based vision training and driving simulator training and on-road training programs, including the 71 participants, was 99.0 ± 6.4 and $99.0 \pm 7.2\%$, respectively. Regarding the safe driving skill score, there were group \times time interactions ($p < 0.01$) indicating benefits of the intervention over time. Although there were no significant group \times time interactions in cognitive tests, dynamic vision showed group \times time interactions ($p < 0.01$). Conclusion: The driving skill program significantly improved safe driving performance in older adults with cognitive impairment who were at a potentially high risk of a car accident.

Keywords: Driving Skill Training, Cognitive Impairment, Old Driver, On-Road Training Programs

5. Vastly Different Exercise Programs Similarly Improve Parkinsonian Symptoms: A Randomized Clinical Trial. *Tollár J, Nagy F and Hortobágyi T.* *Gerontology*, Vol 65, No.2, 2019, Pp- 120–127

Objectives: To directly compare the effects of agility exergaming (EXE) and stationary cycling (CYC) exercise training on Parkinson's disease (PD) patients' mobility and clinical symptoms. Design: Randomized clinical trial. Setting: Outpatient physiotherapy clinic in a hospital. Participants: Seventy-four stage 2–3, nondemented PD patients were included in this study. Intervention: The groups were as follows: EXE (n = 25), CYC (n = 25), and a wait-listed control group (CON; n = 24). The EXE and CYC groups exercised 5×/week for 5 weeks, matched at 80% of the age-predicted maximal heart rate. Main Outcomes: The primary outcome was the Movement Disorders Society Unified Parkinson's Disease Rating Scale (UPDRS-II) score. Secondary outcomes were Parkinson's Disease Questionnaire-39 (PDQ-39), the Beck Depression Inventory (BDI), the Schwab and England Activities of Daily Living (SE-ADL) scale, Euro-Quality of Life-5 Dimensions (EQ-5D) questionnaire, the Berg Balance Scale (BBS), the Balance Evaluation Systems Test (BESTest), the Tinetti Assessment Tool (TAT), the Dynamic Gait Index, the 6-min walk test (6MWT), and standing posturography. Results: After treatment, UPDRS-II scores improved (mean change: EXE, –4.5 points; CYC, –3.2 points). The results for the other outcomes (EXE and CYC, respectively) were: PDQ, 13 and 17%; BDI, –2.5 and –2.1 points; 6MWT, 129.6 and 141.6 m; and EQ-5D, 12 and 9% (all $p < 0.05$, but there was no difference between groups). EXE vs. CYC resulted in improved SE-ADL (8.4 and 4.0 points, effect size [ES]: 0.12), BBS (8.8 and 4.2 points, ES: 0.44), and 2 measures of posturography (ES: 0.11 and 0.21) ($p < 0.05$). BESTest, TAT, the Dynamic Gait Index, and 4 out of 6 posturography measures did not change ($p > 0.05$). Conclusion: Two highly different exercise programs resulted in similar improvement of most motor and clinical symptoms in PD patients.

Keywords: Exercise specificity, Balance training, Posture, Quality of life

6. Office-Based Physical Assessment in Patients Aged 75 Years and Older with Cardiovascular Disease. *Matsuzawa R, Kamiya K, Hamazaki N, Nozaki K, Tanaka S, Maekawa E, Matsunaga A, Masuda T and Ako J.* *Gerontology*, Vol 65, No.2, 2019, Pp-128–135

Background: The detection of impaired physical performance in older adults with cardiovascular disease is essential for clinical management and therapeutic decision-making. There is a requirement for an assessment tool that can be used conveniently, rapidly, and securely in clinical practice for screening decreased physical performance. **Objective:** The present study was performed to evaluate the association of office-based physical assessments with decreased physical performance and to compare the prognostic capability of these assessments in older adults with cardiovascular disease. **Methods:** A total of 1,040 patients aged 75 years and older with cardiovascular disease were included in this analysis. One-leg standing time (OLST) and handgrip strength were measured as office-based physical assessment tools, and short physical performance battery (SPPB), 6-min walk distance, and usual gait speed were also measured at hospital discharge as measurements of physical performance. All-cause mortality was assessed by death registry at the hospital. We examined the association of office-based measures with physical performance and all-cause mortality. **Results:** The areas under the curve of OLST for SPPB < 10, 6-min walk distance < 300 m, and usual gait speed < 1.0 m/s were 0.87 (95% CI 0.83–0.91), 0.83 (95% CI 0.80–0.86), and 0.81 (95% CI 0.78–0.85), respectively. The discrimination abilities of OLST for decreased physical performance were significantly higher than those of handgrip strength. After adjusting for the effects of patient characteristics, the hazard ratio for all-cause mortality in the < 3 s group for OLST was 1.68 (95% CI 1.06–2.67, *p* = 0.03). Handgrip strength, however, was not significantly associated with mortality risk in these participants. **Conclusion:** Short OLST, in particular < 3 s, is associated with decreased physical performance and elevated mortality risk in elderly patients with cardiovascular disease. OLST can be conveniently measured in the clinician’s office as a screening tool for impaired physical performance.

Keywords: Cardiology, Cardiovascular Disease, Elderly Patients, Epidemiology, Frailty, Malnutrition, Mobility, Mortality, Physical Performance, Sarcopenia

7. STING SNP R293Q Is Associated with a Decreased Risk of Aging-Related Diseases. Hamann L, Ruiz-Moreno J.S, Szwed M, Mossakowska M, Lundvall L, Schumann R.R, Opitz B, Puzianowska-Kuznicka M. *Gerontology*, Vol 62, No.2, 2019, Pp-145–154

<https://www.karger.com/Article/FullText/492972>

Background: Aging is a multifactorial process driven by several conditions. Among them, inflamm-aging is characterized by chronic low-grade inflammation driving aging-related diseases. The aged immune system is characterized by the senescence-associated secretory phenotype, resulting in the release of proinflammatory cytokines contributing to inflamm-aging. Another possible mechanism resulting in inflamm-aging could be the increased release of danger-associated molecular patterns (DAMPs) by increased cell death in the elderly, leading to a chronic low-grade inflammatory response. Several pattern recognition receptors of the innate immune system are involved in recognition of DAMPs. The DNA-sensing cGAS-STING pathway plays a pivotal role in combating viral and bacterial infections and recognizes DNA released by cell death during the process of aging, which in turn may result in increased inflamm-aging. Objective: The aim of this study was to investigate whether a variation within the STING gene with known impaired function may be associated with protection from aging-related diseases by decreasing the process of inflamm-aging. Methods: STING (Tmem173) R293Q was genotyped in a cohort of 3,397 aged subjects (65–103 years). The distribution of the variant allele in healthy subjects and subjects suffering from aging-associated diseases was compared by logistic regression analysis. Results: We show here that STING 293Q allele carriers were protected from aging-associated diseases (OR = 0.823, p = 0.038). This effect was much stronger in the subgroup of subjects suffering from chronic lung diseases (OR = 0.730, p = 0.009). Conclusion: Our results indicate that decreased sensitivity of the innate immune receptors is associated with healthy aging, most likely due to a decreased process of inflamm-aging.

Keywords: Senescence, GAS-STING Pathway, Polymorphism

8. Perceived Stress and Mild Cognitive Impairment among 32,715 Community-Dwelling Older Adults across Six Low- and Middle-Income Countries. *Koyanagi A, Oh H, Vancampfort D, Carvalho A.F, Veronese N, Stubbs B and Lara E. Gerontology, Volume 65, No.2, 2019, Pp-155–163*

<https://www.karger.com/Article/FullText/492177>

Background: Perceived stress may be a modifiable risk factor for mild cognitive impairment (MCI) and ultimately dementia, but studies on this topic from low- and middle-income countries (LMICs) are lacking. Objective: We assessed the association

between perceived stress and MCI in six LMICs (China, Ghana, India, Mexico, Russia, and South Africa) using nationally representative data. Methods: Cross-sectional, community-based data on individuals aged ≥ 50 years from the World Health Organization's Study on Global Ageing and Adult Health were analyzed. The definition of MCI was based on the National Institute on Ageing-Alzheimer's Association criteria. A perceived stress score (range 0 [lowest stress] to 10 [highest stress]) was computed based on two questions from the Perceived Stress Scale. Multivariable logistic regression analysis was conducted to assess the association between perceived stress and MCI. Results: The mean (SD) age of the 32,715 participants was 62.1 (15.6) years and 51.7% were females. After adjustment for potential confounders including depression, in the overall sample, a one-unit increase in the perceived stress score was associated with a 1.14 (95% CI = 1.11–1.18) times higher odds for MCI. The association was similar among those aged 50–64 and ≥ 65 years. Countrywise analysis showed that there was a moderate level of between-country heterogeneity in this association ($I^2 = 59.4\%$), with the strongest association observed in Russia (OR = 1.33, 95% CI = 1.15–1.55). Conclusion: If our study results are confirmed in prospective studies, addressing perceived stress may have an impact in reducing the risk for MCI and subsequent dementia in LMICs.

Keywords: Cognition, Perceived Stress, Risk Factor

9. Instrumented Trail-Making Task: Application of Wearable Sensor to Determine Physical Frailty Phenotypes. Zhou H, Razjouyan J, Halder D, Naik A.D, Kunik M.E and Najafi B. *Gerontology*, Vol 65, No.2, 2019, Pp-186–197

Background: The physical frailty assessment tools that are currently available are often time consuming to use with limited feasibility. Objective: To address these limitations, an instrumented trail-making task (iTMT) platform was developed using wearable technology to automate quantification of frailty phenotypes without the need of a frailty walking test. Methods: Sixty-one older adults (age = 72.8 ± 9.9 years, body mass index [BMI] = 27.4 ± 4.9 kg/m²) were recruited. According to the Fried Frailty Criteria, 39% of participants were determined as robust and 61% as non-robust (pre-frail or frail). In addition, 17 young subjects (age = 29.0 ± 7.2 years, BMI = 26.2 ± 4.6 kg/m²) were recruited to determine the healthy benchmark. The iTMT included reaching 5 indexed

circles (including numbers 1-to-3 and letters A&B placed in random orders), which virtually appeared on a computer-screen, by rotating one's ankle-joint while standing. By using an ankle-worn inertial sensor, 3D ankle-rotation was estimated and mapped into navigation of a computer-cursor in real-time (100 Hz), allowing subjects to navigate the computer-cursor to perform the iTMT. The ankle-sensor was also used for quantifying ankle-rotation velocity (representing slowness), its decline during the test (representing exhaustion), and ankle-velocity variability (representing movement inefficiency), as well as the power (representing weakness) generated during the test. Comparative assessments included Fried frailty phenotypes and gait assessment. Results: All subjects were able to complete the iTMT, with an average completion time of 125 ± 85 s. The iTMT-derived parameters were able to identify the presence and absence of slowness, exhaustion, weakness, and inactivity phenotypes (Cohen's d effect size = 0.90–1.40). The iTMT Velocity was significantly different between groups ($d = 0.62$ – 1.47). Significant correlation was observed between the iTMT Velocity and gait speed ($r = 0.684$ $p < 0.001$). The iTMT-derived parameters and age together enabled significant distinguishing of non-robust cases with area under curve of 0.834, sensitivity of 83%, and specificity of 67%. Conclusion: This study demonstrated a non-gait-based wearable platform to objectively quantify frailty phenotypes and determine physical frailty, using a quick and practical test. This platform may address the hurdles of conventional physical frailty phenotypes methods by replacing the conventional frailty walking test with an automated and objective process that reduces the time of assessment and is more practical for those with mobility limitations.

Keywords: Frailty, Instrumented Trail-Making Task, Frailty Phenotype, Gait, Wearable, Virtual-Reality, Cognitive-Motor Test

10. Loneliness Shapes the Relationship between Information and Communications Technology Use and Psychological Adjustment among Older Adults. Fang Y, Chau A.K.C, Fung H.H and Woo J. *Gerontology*, Vol 65, No.2, 2019, Pp-198–206

Background: Given findings that generally support the benefits of information and communication technology (ICT) for older adults' psychosocial adjustment, one might surmise that lonely older adults, who have a stronger need for psychological support,

would reap more psychosocial benefits from ICT use. However, scant research has examined this view; much less the likelihood that ICT use might worsen the psychological well-being of lonely older adults, as has been shown to be the case in younger adults. Objective: To examine whether the association between ICT use and psychological adjustment (i.e., psychological distress and sense of community [SOC]) among older adults depends on their loneliness levels. Methods: A representative sample of 738 Hong Kong SAR Chinese older adults aged 60 years or older (56% female) was interviewed in 2017 on loneliness, frequency of ICT use (i.e., Internet and smart devices), psychological distress (6-item Kessler scale; K6), and SOC. Results: Regression analyses showed that loneliness significantly moderated the relationship between ICT use frequency and psychological adjustment (psychological distress and SOC); more frequent ICT use was associated with more psychological distress and less SOC, with higher levels of loneliness. Conclusion: These findings suggest that ICT use may be a mixed blessing for older adults, i.e., using more ICT might predict worse psychological adjustment among lonelier older adults. Efforts that promote ICT use among older adults should take their loneliness levels into account.

Keywords: Loneliness, Social isolation, Information and communication technology, Psychological distress, Sense of community, Gerontechnology

Contraception

11. Sexual Concurrency and Contraceptive Use among Young Adult Women.
Abigail Weitzman, Jennifer Barber and Yasamin Kusunoki. Demography, Vol 56, No. 2, Apr 2019, Pp-549-572

Leveraging 2.5 years of weekly data from the Relationship Dynamics and Social Life Study, we investigate the relationship between young women's sexual concurrency and their contraceptive behavior. Specifically, we (1) examine whether young women changed their contraceptive use when switching from one to multiple concurrent sexual partners in the same week; (2) explore the uniformity of contraceptive responses to concurrency across relationship context; and (3) compare the contraceptive behaviors of never-concurrent women with those of ever-concurrent women in weeks when they were not concurrent. Nearly one in five sexually active young women had sex with two or more people in the same week. When they were concurrent, these women's odds of using any contraception increased threefold, and their odds of using condoms increased fourfold. This pattern of contraceptive adjustments was the same across relationship characteristics, such as duration and exclusivity. Yet when they were not concurrent, ever-concurrent women were less likely to use any contraception and used condoms less consistently than women who were never concurrent. We discuss these findings in the context of ongoing debates about the role of sexual concurrency in STI transmission dynamics.

Keywords: Sexual concurrency, Contraception, Sexual health

Demography

12. Multiple-Partner Fertility in the United States: A Demographic Portrait.
Lindsay M. Monte. Demography, Vol 56, No.1, Feb 2019, Pp-103–127

Multiple-partner fertility (MPF) occurs when a person has biological children with more than one partner. The 2014 Survey of Income and Program Participation (SIPP), a nationally representative panel study of individuals and households in the United States, is the first such survey to include a direct question about whether respondents are MPF parents. Understanding the prevalence of such families is important given the known socioeconomic correlates of MPF and the ramifications of entering MPF for both individuals and families. In this study, the new SIPP data are used to generate key benchmarks for a national sample, present subpopulation estimates, and describe the sample of adults with children by multiple partners.

Keywords: Multiple-Partner, Fertility, SIPP, MPF

13. From Some to None? Fertility Expectation Dynamics of Permanently Childless Women. *Alison Gemmill.* Demography, Vol 56, No. 1, Feb 2019, Pp-129–149

Permanent childlessness is increasingly acknowledged as an outcome of a dynamic, context-dependent process, but few studies have integrated a life course framework to investigate the complex pathways leading to childlessness. This study focuses on an understudied yet revealing dimension of why individuals remain childless: stated fertility expectations over the life course. Using data from the National Longitudinal Survey of Youth 1979 cohort, I use a combination of sequence analysis, data-driven clustering techniques, and multivariable regression models to identify and describe

groups of permanently childless women who follow similar trajectories of stated fertility expectations. Results indicate that a little more than one-half (56 %) of eventually childless women fall into a cluster where childlessness is expected before age 30. Women in the remaining clusters (44 %) transition to expecting childlessness later in the life course but are differentiated by the types of trajectories that precede the emergence of a childless expectation. Results from multivariable regression show that several respondent characteristics, including race/ethnicity, education, and marital history, predict cluster membership. Taken together, these findings add to a growing body of literature that provides a more nuanced description of permanently childless women and motivates further research that integrates interdependencies between life course domains and fertility expectations and decision-making of those who remain childless.

Keywords: Childlessness, Fertility Expectations, Life Course Sequence Analysis

14. Prevalence and Risk Factors for Early Motherhood among Low-Income, Maltreated, and Foster Youth. *Sarah A. Font Maria Cancian, Lawrence M. Berger.* *Demography*, Vol 56, No. 1, Feb 2019, Pp 261–284.

Early childbearing is associated with a host of educational and economic disruptions for teenage girls and increased risk of adverse outcomes for their children. Low-income, maltreated, and foster youth have a higher risk of teen motherhood than the general population of youth. In this study, we assessed differences in the risk of early motherhood among these groups and investigated whether differences likely reflect selection factors versus effects of involvement with Child Protective Services (CPS) or foster care. Using a state-wide linked administrative data system for Wisconsin, we employed survival analysis to estimate the hazard of early birth (child conceived prior to age 18) among females. We found that both the youth involved in CPS and youth in foster care were at significantly higher risk of early motherhood than low-income youth, and these differences were not explained by a range of sociodemographic and family composition characteristics. Moreover, our findings indicate that CPS and foster care are unlikely to be causal agents in the risk of early motherhood: among foster youth, risk was lower during foster care compared with before; among CPS-involved girls, risk

was the same or lower after CPS investigation compared with before. Subsequent analysis showed that after girl's exited foster care, those who were reunified with their birth families were at higher risk than those placed in adoption or guardianship. Overall, our findings suggest that whereas CPS and foster youth are high-risk populations for early motherhood, CPS involvement and foster care placement do not exacerbate, and may instead reduce, risk.

Keywords: Early Parenthood, Poverty, Child Protective Services, Foster Care

15. Income-Related Gaps in Early Child Cognitive Development: Why Are They Larger in the United States Than in the United Kingdom, Australia, and Canada?

Bruce Bradbury, Jane Waldfogel, Elizabeth Washbrook. Demography, Vol 56, No. 1, Feb 2019, Pp- 367–390

Previous research has documented significantly larger income-related gaps in children's early cognitive development in the United States than in the United Kingdom, Canada, and Australia. In this study, we investigate the extent to which this is a result of a more unequal income distribution in the United States. We show that although incomes are more unequal in the United States than elsewhere, a given difference in real income is associated with larger gaps in child test scores there than in the three other countries. In particular, high-income families in the United States appear to translate the same amount of financial resources into greater cognitive advantages relative to the middle-income group than those in the other countries studied. We compare inequalities in other kinds of family characteristics and show that higher income levels are disproportionately concentrated among families with advantageous demographic characteristics in the United States. Our results underline the fact that the same degree of income inequality can translate into different disparities in child development, depending on the distribution of other family resources.

Keywords: Child Development, School Readiness, Parental Income, Cross-National, Social Mobility

16. Misreporting Month of Birth: Diagnosis and Implications for Research on Nutrition and Early Childhood in Developing Countries. *Anna Folke Larsen, Derek Headey and William A. Masters. Demography, Vol 56, No.2, Apr 2019, Pp-707–728*

A large literature has used children's birthdays to identify exposure to shocks and estimate their impacts on later outcomes. Using height-for-age z scores (HAZ) for more than 990,000 children in 62 countries from 163 Demographic and Health Surveys (DHS), we show how random errors in birth dates create artifacts in HAZ that can be used to diagnose the extent of age misreporting. The most important artifact is an upward gradient in HAZ by recorded month of birth (MOB) from start to end of calendar years, resulting in a large HAZ differential between December- and January-born children of -0.32 HAZ points. We observe a second artifact associated with round ages, with a downward gradient in HAZ by recorded age in months, and then an upward step after reaching ages 2, 3, and 4. These artifacts have previously been interpreted as actual health shocks. We show that they are not related to agroclimatic conditions but are instead linked to the type of calendar used and arise mainly when enumerators do not see the child's birth registration cards. We explain the size of the December–January gap through simulation in which 11 % of children have their birth date replaced by a random month. We find a minor impact on the average stunting rate but a larger impact in specific error-prone surveys. We further show how misreporting MOB causes attenuation bias when MOB is used for identification of shock exposure as well as systematic bias in the impact on HAZ of events that occur early or late in each calendar year.

Keywords: Nutrition, Height-for-age, Stunting, Measurement error, Child age

Diseases

17. Health related quality of life of patients with type 2 diabetes mellitus at a tertiary care hospital in India using Eq 5D 5L. *Paresh C Parik, Varsha Jitendra Patel.* Indian Journal of Endocrinology and Metabolism, Vol 23, No.4, Jul-Aug 2019, Pp-407-411

<http://www.ijem.in/article.asp?issn=2230-8210;year=2019;volume=23;issue=4;spage=407;epage=411;aualast=Parik;type=0>

Objective: To assess the health-related quality of life of Type 2 Diabetes mellitus patients attending outpatient departments of a tertiary hospital using EQ-5D-5L. **Methods:** The study was conducted at a tertiary care hospital in India. The quality of life of patients with type 2 Diabetes mellitus, age 18 years and older, attending outpatient departments of Medicine and Endocrinology was assessed with the help of EQ-5D-5L, a measure of self-reported health related quality of life. Data was analyzed to obtain EQ-5D-5L scores for the five dimensions and EQ VAS score. Correlation of EQ VAS score with different variables was analyzed. **Results:** Out of total 358 participants, 208 had comorbidities, hypertension being the most common. Mean age was 60.71 ± 11.41 years and 216 (58.9%) were female participants. Out of five dimensions, Mobility, Self-care, Usual activities, and Pain/discomfort were most affected in age group 71 years and above while anxiety/depression affected age group 18–30 years the most. Mean EQ VAS score was 78.83 ± 15.02 . Female participants had significantly higher EQ VAS score ($P = 0.00$) than male participants. EQ VAS score showed significant negative correlation with uncontrolled state of diabetes ($P = 0.000$). There was significant difference in EQ VAS score between patients with and without comorbidities. ($P = 0.004$) Cronbach alpha for EQ-5D-5L was 0.76. **Conclusion:** The results suggest that EQ-5D-5L is a reliable measure for assessing health related quality of life of patients with Type 2 Diabetes mellitus. Type 2 Diabetes adversely affects the quality of life of patients. Uncontrolled disease and comorbidities can further compromise the quality of life.

Keywords: EQ 5D 5L, Quality Of Life, Type 2 Diabetes

18. Continuation of metformin till night before surgery and lactate levels in patients undergoing coronary artery bypass graft surgery. *Tarannum Bano, Sunil Kumar Mishra, Mohammad Shafi Kuchay, Yatin Mehta, Naresh Trehan, Pooja Sharma, Manish Kumar Singh, Ambrish Mithal.* Indian Journal of Endocrinology and Metabolism. Vol 23, No.4, Jul-Aug 2019, Pp- 416-421

<http://www.ijem.in/article.asp?issn=2230-8210;year=2019;volume=23;issue=4;spage=416;epage=421;aurlast=Bano>

Background: Lactic acidosis is a rare but serious complication associated with metformin therapy in certain high-risk patients. NICE guidelines and the British National Formulary advise the discontinuation of metformin before surgery. The drug manufacturer's datasheet advises the withdrawal of metformin 48 h before surgery. However, the data regarding perioperative use of metformin is scarce. **Aims:** To evaluate the effect of continuation of metformin till night before surgery on lactate levels in patients undergoing coronary artery bypass graft (CABG) surgery. **Materials and Methods:** In this prospective cohort study, 1,800 consecutive patients who underwent CABG between 1st November 2015 and 31st October 2016 were enrolled. Following exclusion criteria, a total of 790 subjects were included for final analysis. Three-hundred and eight seven (48.9%) patients with diabetes received metformin till night before surgery (Met group), 239 (30.3%) patients with diabetes were non-metformin users (Non-Met group), and 164 (20.8%) patients were having no diabetes (Non-Diab group). Lactate levels and arterial pH were measured using arterial blood gas machine. Postoperative morbidity outcome data were obtained by collecting clinical data, routine biochemistry, and chest imaging. **Results:** The mean metformin dose was 1,124.6 mg/day (SD: 509.3; range: 500–2,500 mg/day). Mean postoperative lactate levels were 1.91 ± 0.7 in Met group, 2.04 ± 0.79 in Non-Met group, and 2.07 ± 0.78 in Non-Diab group. Lactic acidosis occurred in 41 patients and there was no difference among the groups [Met group = 18 (4.7%); Non-Met group = 14 (5.9%)]. Among secondary outcome measures, acute renal failure occurred more frequently in diabetic patients [Met group = 46 (11.9%) and Non-Met group = 32 (13.4%)] as compared with non-diabetic patients. There were no differences with regard to pneumonia, length of ICU stay, and duration of ventilatory support among the three groups. **Conclusions:** Continuation of metformin till night before surgery is not associated with significant changes in lactate levels in patients undergoing CABG.

Keywords: Coronary Artery Bypass Graft, Lactate Levels, Lactic Acidosis, Metformin, Type 2 Diabetes

19. Inverse relationship between 25 hydroxy Vitamin D and parathormone: Are there two inflection points? Pradip Mukhopadhyay, Sujoy Ghosh, Kingshuk Bhattacharjee, Subhankar Chowdhury. *Indian Journal of Endocrinology and Metabolism*, Vol 23, No.8, Jul-Aug, 2019. Pp-422-427

<http://www.ijem.in/article.asp?issn=2230-8210;year=2019;volume=23;issue=4;spage=422;epage=427;aurlast=Mukhopadhyay>

Context: There is no consensus about the inflection point for 25 hydroxy vitamin D below which the intact PTH level increases. Objective: Determine the relationship/inflection point between 25 hydroxy vitamin D and parathormone levels. Materials and Methods: We performed a population-based analysis on a nonobese cohort (n = 405). Results: Prevalence of vitamin D deficiency was 58.76% (n = 228). Vitamin D insufficiency was found in 34.56% (n = 140). An inverse relationship between 25 hydroxy vitamin D (25(OH)D) and intact PTH exist, but strength of such relationship is weak (r = -0.16, P = 0.018). With respect to the 25(OH)D cut-off of 16 ng/mL by IOM (EAR linked), proportion of persons with high intact PTH was higher in the group with lower 25(OH)D compared with higher 25(OH)D group (P = 0.005) and it was similar for RDA linked cut-off of 20 ng/mL also (P = 0.017). LOWESS method revealed two inflection points at which PTH levels change. A less conspicuous inflection point was found at 32 ng/mL (95% CI, 27–36), which reasonably corroborates with the current cutoff of definition of vitamin D sufficiency, and the second, steeper inflection point was found at 16.5 ng/ml (95% CI, 14.9–18.8) which corroborates with the IOM supported EAR linked value of 25(OH)D level in general population and possible definition of vitamin D deficiency. Conclusions: There are possibly two inflection points at which PTH levels change in relation to 25(OH)D levels

Keywords: Inflection Point, Vitamin D Deficiency, Vitamin D Insufficiency

20. Prevalence of childhood obesity in an affluent school in Telangana using the recent IAP growth chart: A pilot study. Naval Chandra, Beatrice Anne, K Venkatesh, G Dharma Teja, Shiva Krishna Katkam. Indian Journal of Endocrinology and Metabolism, Vol 23, No.4, Jul-Aug, 2019, Pp-428-432

<http://www.ijem.in/article.asp?issn=2230-8210;year=2019;volume=23;issue=4;spage=428;epage=432;aulast=Chandra>

Aims and Objectives: To study the prevalence of obesity in children in an affluent school in Hyderabad, Telangana, using the recent Indian Academy of Paediatrics (IAP) growth charts and to compare the same with the Centre for Disease Control and Prevention (CDC) charts. **Methods:** A cross-sectional study was conducted in an affluent school of Hyderabad in January 2018. After getting appropriate permission, anthropometry measurements of the school children were done. The data were collected from students of Classes 4–10. Each class had three sections. Each section had around 25–30 students. Body mass index (BMI), calculated as weight (kg)/height² (m²) was used to classify the participants using age- and gender-specific cut-points as per CDC growth charts and the recent IAP charts. **Results:** A total of 544 students were studied. About 52% were boys (n = 288) and 48% were girls (n = 256). Using the IAP charts, 24.6% were obese and 35.8% were overweight. Using the CDC criteria, the prevalence of obesity and overweight was 15.4% and 26.1%, respectively. The mean BMI in the obese group was 25.6 ± 3.5 kg/m² and in the overweight group was 21.1 ± 1.9 kg/m². The prevalence of obesity and overweight was more in girls (obesity 32.8% versus 17.3% and overweight 44.5% versus 28.1%, respectively). The highest prevalence of childhood obesity was seen in the 8–10 years age group. **Conclusions:** Our study reflects the increased prevalence of obesity and overweight in the adolescent age group, using the recent IAP criteria.

Keywords: Adolescents, Obesity, School Children

21. Presentation, morbidity and treatment outcome of acromegaly patients at a single centre. *Rayees Ul Hamid Wani, Raiz Ahmad Misgar, Moomin Hussain Bhat, Javaid Ahmad Bhat, Shariq Rashid Masoodi, Mir Iftikhar Bashir, Arshad Iqbal Wani.* Indian Journal of Endocrinology and Metabolism, Vol, 23, No.4, Jul-Aug, 2019, Pp- 433-437

<http://www.ijem.in/article.asp?issn=2230-8210;year=2019;volume=23;issue=4;spage=433;epage=437;aulast=Wani>

Introduction: The management of acromegaly, a rare and potentially curable disease, has undergone a paradigm shift in the past few decades. Many of the treatment modalities recommended for acromegaly are either too expensive or not available in many parts of India. There is a dearth of treatment and outcome data in Indian patients. **Aim:** Our aim was to study the clinical presentation, hormonal profile, radiology, management, and outcome of the disease at our center. **Materials and Methods:** Fifty one patients with acromegaly who attended the Department of Endocrinology, SKIMS, Srinagar, between October 2015 and April 2017, were included in the study. Clinical and hormonal profiles, comorbidities, treatment modalities, and outcome were evaluated. **Results:** The gender distribution was equal with the mean age of 42.3 ± 10.9 years at diagnosis. The majority (41) of the patients had macroadenoma. The most common presenting manifestations were acral enlargement and headache. Hypertension was present in 23, musculoskeletal manifestations in 19, and diabetes mellitus in 11 patients. Surgery was the most common method of treatment. Preoperatively only one patient with micro-adenoma had hypocortisolism, which was persistent in postoperative period, while no patient had preoperative or postoperative hypothyroidism or hypogonadism. As per the present consensus criteria, 23.7% patients achieved disease control (40% with microadenoma and only 19.5% with macroadenoma). The surgical complications occurred in 5 patients—CSF leak in 3 meningitis in 2 patients all except one having macroadenoma. **Conclusions:** The presentation of disease was generally comparable to that reported in literature. Cure rates were significantly lower than those reported from many large centers.

Keywords: Acromegaly, Clinical Presentation, Pituitary Macroadenoma

22. Prevalence of end-organ damage, beta cell reserve, and exocrine pancreas defect in fibrocalculous pancreatic diabetes: An Eastern India perspective.

Beatrice Anne, Sujoy Ghosh, Ipsita Ghosh, Sayantan Ray, Subhankar Chowdhury, Deep Dutta. Indian Journal of Endocrinology and Metabolism, Vol 23, No. 4, Jul-Aug 2019, Pp-438-445

<http://www.ijem.in/article.asp?issn=2230-8210;year=2019;volume=23;issue=4;spage=438;epage=445;aulast=Anne>

Background: Data on prevalence and burden of end-organ damage in fibrocalculous pancreatic diabetes (FCPD) from eastern India is scant. This study investigated the burden of end-organ damage and exocrine pancreatic defect in FCPD patients in Eastern India. Materials and Methods: Consecutive FCPD patients underwent evaluation of glycemic control, C-peptide, fecal elastase, body fat percent, tests for cardiac autonomic neuropathy (CAN), neuropathy, nephropathy, and retinopathy which were compared with data from type-1 diabetes (T1DM) and type-2 diabetes (T2DM). Results: Data from 101 FCPD, 41 T1DM, 40 T2DM, and 40 controls were analyzed. Body fat percent was lowest in FCPD and T1DM. Similarly, fasting and stimulated C-peptide was significantly lowest in T1DM, followed by FCPD. Significant elevations in stimulated C-peptide were observed in FCPD. Fecal elastase was lowest in FCPD. Exocrine pancreas defect in FCPD, T1DM, and T2DM was 100%, 53.66%, 27.5%, respectively. HbA1c was worst in FCPD. About 40% of FCPD patients had CAN while 13.33% had borderline CAN. Isolated parasympathetic dysfunction was the commonest (66.67%) among them. FCPD patients with CAN had lower fecal elastase, higher HbA1c, microalbuminuria, steatorrhea, neuropathy, retinopathy, and nephropathy, compared to those without CAN. On binary logistic regression, diabetes duration was a significant predictor of end-organ damage in FCPD. Fecal elastase and body fat percent were independent predictors for insulin therapy in FCPD. Conclusion: CAN is common in FCPD while exocrine pancreas defect is most severe in FCPD followed by T1DM and T2DM. Fecal elastase has an important prognostic role for insulinization in FCPD. Role of pancreatic enzyme replacement on glycemic control in diabetes with exocrine pancreas defect needs investigation.

Keywords: End-Organ Damage, Exocrine Defect, Fibrocalculous Pancreatic Diabetes

23. Long-term response to recombinant human growth hormone therapy in Indian children with growth hormone deficiency. *Monita Gahlot, Alpesh Goyal, Arun K C. Singh, Viveka P Jyotsna, Nandita Gupta, Rajesh Khadgawat.* Indian Journal of Endocrinology and Metabolism, Vol, 23, No.4, Jul-Aug 2019, Pp-446-451

<http://www.ijem.in/article.asp?issn=2230-8210;year=2019;volume=23;issue=4;spage=446;epage=451;aulast=Gahlot>

Background: Growth hormone deficiency (GHD) remains the most common indication for use of recombinant human growth hormone (rhGH) therapy in clinical practice. However, there is a paucity of studies focusing on long-term response to rhGH therapy in the Indian context. **Aim:** To determine the response to rhGH therapy and its predictors in children with GHD followed up at a tertiary care center in North India. **Materials and Methods:** We performed a retrospective review of the records of children with GHD who received rhGH therapy for at least 1 year. The relevant anthropometric, biochemical and radiological data at baseline and follow-up were recorded. **Results:** A total of 99 children (64 boys, 35 girls; 61 isolated GHD, 38 multiple pituitary hormone deficiency) were studied. The mean (\pm SD) age and height SDS at treatment initiation were 12.4 (\pm 3.0) years and -4.0 (\pm 1.1) respectively, while median (IQR) serum insulin-like growth factor 1 (IGF-1) and peak growth hormone level on clonidine stimulation were 73 (25-167) ng/ml and 1.1 (0.4-3.6) ng/ml respectively. The height velocity was highest during the first year of treatment (10.6 ± 3.0 cm/year), declining to 8.7 ± 2.7 and 7.9 ± 2.2 cm/year during second and third year, respectively. Over the subsequent years, there was further graded fall in height velocity, declining to 4.8 ± 3.6 cm/year ($n = 2$) during the seventh year. The height gain during first year was negatively correlated with age at initiation of treatment, baseline height SDS, baseline serum IGF-1 and peak serum GH level on GH stimulation test, while it showed a positive correlation with bone age delay at baseline. Only baseline height SDS was found to have a significant negative correlation with height gain during the second year. **Conclusions:** This study provides data on long-term response to rhGH therapy and its predictors in Indian children with GHD.

Keywords: Growth Hormone Deficiency, Height Velocity, India, Predictors of Response, Recombinant Human Growth Hormone

24. Surgical management of primary hyperparathyroidism in the era of focused parathyroidectomy: A study in tertiary referral centre of North India. *Sanjay K Yadav, Saroj K Mishra, Anjali Mishra, Sabaretnam Mayilvagnan, Gyan Chand, Gaurav Agarwal, Amit Agarwal, Ashok K Verma.* Indian Journal of Endocrinology and Metabolism, Vol 23, No. 4, Jul-Aug 2019, Pp-468-472

<http://www.ijem.in/article.asp?issn=2230-8210;year=2019;volume=23;issue=4;spage=468;epage=472;aulast=Yadav>

Background: Despite the benefits of focused parathyroidectomy (FPTx), few studies have questioned its durability with lower long-term cure rates than bilateral or conventional parathyroidectomy (CPTx). The objective of this study is to bring out the information on the type of surgical management versus cure rate, recurrence, and role of intra-operative parathyroid hormone (IOPTH) level monitoring of PHPT patients. Material and Methods: This was a retrospective study of all PHPT patients treated at our center based on operative approach (CPTx vs FPTx) or use of IOPTH. Treatment failure was divided into persistent or recurrent disease, based on documentation of hypercalcemia in combination with an inappropriate PTH within 6 months or more of surgery, respectively. Results: Overall, 50.78% patients underwent CPTx and 49.32% FPTx. 29 FPTx were converted to CPTx. Intention to treat analysis between CPTx and FPTx showed that the persistence rate was not statistically different at 2.54% and 4%, respectively (P = 0.98). Furthermore, when the persistence rate was scrutinized by a treatment received (TR) instead of ITT analysis, the persistence rate was higher for the patients who underwent TR-CPTX than for the patients subjected to TR-FPTX (3.22% vs 1.08%) but not significant statistically. We further analyzed the outcome of FPTx with IOPTH (n = 213) and FPTx without IOPTH (n = 28). The outcome did not differ between two groups statistically. Conclusion: FPTx yields a similar success rate as compared to CPTx even in symptomatic PHPT patients and can be performed safely even without intra-operative adjunct IOPTH in selected patients.

Keywords: Intra-Operative PTH, Parathyroidectomy, Primary Hyperparathyroidism

25. Genetic profile of Indian pheochromocytoma and paraganglioma patients – A single institutional study. *Gaurav Agarwal, Sendhil Rajan, Ramya C Valiveru, Sonam Tulsyan, Vinita Agrawal, Balraj Mittal, Ghazala Zaidi, Sabaretnam Mayilvaganan, Anjali Mishra, Amit Agarwal, Saroj Kanta Mishra, Eesh Bhatia.* Indian Journal of Endocrinology and Metabolism, Vol 23, No. 4, Jul-Aug 2019, Pp-486-490

<http://www.ijem.in/article.asp?issn=2230-8210;year=2019;volume=23;issue=4;spage=486;epage=490;aulast=Agarwal>

Background and Aims: Pheochromocytomas (PCCs) and Paragangliomas (PGL) are rare catecholamine producing tumors that may present in sporadic or familial settings. Despite vast strides in understanding of PCC/PGL genetics in the last two decades, there is a dearth of information from India. The aim here is to study the prevalence of genetic mutations in Indian PCC/PGL patients. **Settings and Design:** Tertiary care academic hospital; prospective study. **Methods:** 50 histopathologically diagnosed PCC/PGL patients formed the study group. Clinical, biochemical, pathological attributes and outcomes were documented and the phenotype was compared to the genotype. Succinyl dehydrogenase (SDH), Re-Arranged during Transfection (RET), Von-Hippel-Lindau (VHL) and NeuroFibromatosis-1 (NF1) mutations were studied. Additionally, immunohistochemistry for SDHB was also done, and the results compared to mutational analysis of SDH by MLPA (Multiplex Ligation-dependent Probe Activation). **Statistical Analysis:** Independent samples t-test and Fisher's exact test were used as appropriate. P values ≤ 0.05 were considered statistically significant. **Results:** The mean age was 34.3 years. Of the 50 patients, 27 were males and 23 females. 10 patients (20%) in all were detected to have a genetic mutation. 6 patients possessed a RET mutation, while two had VHL mutations. No patient presented with a NF1 mutation. 2 patients had a SDH mutation, and Immunohistochemistry for SDHB correlated with mutational analysis for these patients. **Conclusions:** The proportion of patients with a familial variant of PCC/PGL is more than what the historic "Rule of Ten" suggests. Our study found that one in five patients have a genetic mutation. PCC/PGL patients with genetic mutations not only require more stringent follow-up, but also screening of family members.

Keywords: Genotype, Mutations, NF-1 Multiple Endocrine Neoplasia Syndrome-2, Paraganglioma, Pheochromocytoma, RET Mutation, SDH Mutations, VHL Mutations

26. Reducing COPD readmissions through predictive modeling and incentive-based interventions. *Xiang Zhong, Sujee Lee, Cong Zhao, Hyo Kyung Lee, Philip A. Bain, Tammy Kundinger, Craig Sommers, Christine Baker and Jingshan Li.* Health Care Management Science, Vol 22, No.1, Mar 2019, Pp-121-139.

This paper introduces a case study at a community hospital to develop a predictive model to quantify readmission risks for patients with chronic obstructive pulmonary disease (COPD), and use it to support decision making for appropriate incentive-based interventions. Data collected from the community hospital's database are analyzed to identify risk factors and a logistic regression model is developed to predict the readmission risk within 30 days post-discharge of an individual COPD patient. By targeting on the high-risk patients, we investigate the implementability of the incentive policy which encourages patients to take interventions and helps them to overcome the compliance barrier. Specifically, the conditions and scenarios are identified for either achieving the desired readmission rate while minimizing the total cost, or reaching the lowest readmission rate under incentive budget constraint. Currently, such models are under consideration for a pilot study at the community hospital.

Keywords: Chronic Obstructive Pulmonary Disease (COPD), Readmission, Predictive Modelling, Intervention Incentive

27. A Study of Pediatric Leprosy in a Tertiary Care Center in a Western State of India: A Descriptive Study. *SP Rathod, A Jagati, BJ Shah and P Chowdhary.* Indian Journal of Leprosy, Vol 91, No. 3, Jul-Sept 2019, Pp-169-173.

[http://www.ijl.org.in/2019/1%20SP%20Rathod%20\(169-173\)%20\(1\).pdf](http://www.ijl.org.in/2019/1%20SP%20Rathod%20(169-173)%20(1).pdf)

Elimination of leprosy as public health problem (defined as a registered prevalence of less than 1 case per 10,000 population) was achieved globally in 2000 and in 2005 from India. However, new cases including those in children continue to be reported. As

pediatric leprosy shows active transmission of infection in the community, these have special epidemiological significance. The objective of this study was to study the profile of leprosy and deformity in pediatric age group (<15 years). A descriptive cohort study was carried out. The present study comprises of pediatric leprosy patients among 200 patients of leprosy who presented to outpatient Department of a tertiary dermatology center in Western Gujarat during the period 2009-10 and followed up until 2016. All newly diagnosed, on-treatment and relapse cases of leprosy in pediatric age group during that period were included. Detailed history, relevant past and family history were noted. A detailed physical examination was carried out, Slit Skin Smear (SSS) and punch biopsy to confirm the diagnosis was also done. The patients were then classified as per WHO into Paucibacillary(PB) / Multibacillary(MB) cases for treatment purpose and treatment provided accordingly. The patients were regularly followed up during the study period. Findings shows that out of 200 patients, 7.5% (n=15) patients belonged to pediatric age group. Tuberculoid leprosy was the commonest type seen in 53.2% (n=8) of pediatric patients. Male: Female ratio (4:1) was much higher in children than adults. 33% (n=5/15) patients had a positive household contact. There were no deformities seen in this age group. This study signifies the importance of transmission in close contacts. However, the matter of concern remains that 67% of children had no household contacts. Such cases require in-depth epidemiological investigations for other possible sources of transmission.

Keywords: Paediatric Leprosy, Household Contact, Prevalence, Gujarat, India

28. Childhood Leprosy Scenario at a Tertiary Level Hospital: A Four - Year Retrospective Study. *R Gupta, R Sinha and S Pradhan.* Indian Journal of Leprosy, Vol 91, No. 3, Jul-Sept 2019, Pp-217-224.

Childhood leprosy is an important marker of the status of any ongoing leprosy control programme because it is an indicator of active disease transmission in the community. Studies pertaining to proportion and characteristics of paediatric cases from Bihar are few in number. Hence, present study was carried out to know the scenario of childhood leprosy. A retrospective analysis of 4 year records of leprosy patients aged up to 14 years in a tertiary care hospital of Bihar, was carried out from June 2014 to May 2018. A total number of 72 (9.31% of total leprosy) cases of childhood leprosy reported to

AIIMS, Patna, Bihar, India during this 4-year period. The majority of cases belonged to the age group of 11-14 year (84.72%) with a male preponderance. Borderline tuberculoid was the commonest clinical type (44%) followed by tuberculoid type (29%). Borderline lepromatous, Indeterminate form, Histoid leprosy and Pure Neural type was seen in 2, 4, 1, 2 cases respectively. Multibacillary (MB) cases constituted a total of 39 (54.16%), while remaining 33 (45.83%) were of paucibacillary (PB) type. A solitary skin lesions either a hypo-pigmented or an erythematous patch with decreased sensation with or without thickened nerve was the most frequent manifestation in 34 cases (47.22%) followed by 2-5 skin lesions in 29 (40.27%) and more than 5 skin lesions or diffuse infiltration in 9 (12.5%) patients. Although nerve thickening was seen in 32 (44%) cases, neuritis and lepra reactions were less common. Disability was noted in 15.27% cases (Grade 1 disability in 2.7% and Grade 2 disability in 12.5%). History of contact was found in 51.38% cases. Continuous and sustained efforts for early case detection of leprosy cases in the community in general, and a close follow-up of susceptible children amongst household contacts of leprosy cases will be desirable to treat these cases of childhood leprosy early before they develop any disability. Intense efforts are thus required to achieve the target of zero disability in child leprosy cases set in the Global Leprosy Strategy 2016-2020.

Keyword: Childhood Leprosy, Prevalence, Retrospective Study, Elimination.

28. Disability in New Leprosy Cases - Magnitude, Pattern and Associated Factors: A Cross Sectional Study in a Subdivision of Darjeeling District, West Bengal. *K Ishore, DK Das and S Banerjee.* Indian Journal of Leprosy, Vol 91, No. 3, Jul-Sept 2019, Pp-207-215.

[http://www.ijl.org.in/2019/5%20K%20Ishore%20et%20al%20\(207-215\)%20\(1\).pdf](http://www.ijl.org.in/2019/5%20K%20Ishore%20et%20al%20(207-215)%20(1).pdf)

Leprosy is an infectious disease, which may lead to disability before, during or after treatment. Leprosy is associated with social stigma and discrimination because of disability and disfigurement and recognized as a disease of major public health significance. As factors associated with occurrence and management of disabilities may vary from area to area, it is important to generate this information in affected populations. This study has been carried out to determine the extent and pattern of disabilities among newly diagnosed leprosy cases, factors associated with disability,

provision and utilization of disability preventive services. This cross-sectional study was conducted in Siliguri subdivision of Darjeeling district, West Bengal. All newly diagnosed and registered leprosy cases in a reference year (April 2013 - March 2014) were included. Detailed medical examination and interviews were carried out to assess the disability and to study the relevant aspects. The entire collected data was analysed using SPSS software and chi-square, binary logistic regression were applied to test association between disability and other epidemiological correlates. It was observed that all the disabilities were in multibacillary (MB) cases only. Child leprosy rates of 5.5% appears to be promising statistics. Among 110 new leprosy cases studied, overall proportion of disability was 15.5%; grade 1 and grade 2 disabilities were 9.1% and 6.4% respectively. Hand was the commonest site of involvement, whereas grade 2 disability was highest in feet (2.7%). Disability status was found to be significantly associated with number of nerve involvement and history of treatment interruption. Utilization of disability preventive services was found very poor. Significantly the proportion of disability was highest among leprosy cases aged 60 years or more (37.5%). As no disability was noted in patients below 15 years, march towards achieving one of the targets of Global Leprosy Strategy 2016-20 appears to be closing to goal. Though the situation may be better comparably to some other parts of country, yet the overall proportion of disabilities as well as grade 1 and grade 2 disabilities among newly diagnosed leprosy cases is unacceptably high in the studied area. Community based studies and appropriate interventions can help in achieving the targets pertaining to leprosy situation in general and access to quality services in particular.

Key words: Darjeeling, Disabilities, Grades of Disability, Leprosy Cases, Preventive Services

Family Planning

29. Women's Perspectives on Postpartum Intrauterine Devices in Tanzania. Sarah Huber-Krum, Kristy Hackett, Leigh Senderowicz, Erin Pearson, Joel M. Francis, Hellen Siril Nzovu Ulenga and Iqbal Shah. *Studies in Family Planning*, Vol 50, No. 4, Dec 2019, Pp-317-336.

Despite the numerous benefits of the postpartum copper intrauterine device (PPIUD), which is inserted within 48 hours after giving birth, it is underutilized in many resource-constrained settings, including Tanzania. We conducted in-depth interviews with 20 pregnant women who received contraceptive counseling during routine antenatal care in 2016–2017 and 27 postpartum women who had a PPIUD inserted in 2018 to understand reasons for use versus nonuse and continuation versus discontinuation. Primary motivators for using a PPIUD included: convenience, effectiveness, perceived lack of side effects, and duration of pregnancy protection. Barriers to use included: fear of insertion, concerns related to sexual experiences post-insertion, and limited knowledge. Women who had a PPIUD inserted continued use when their expectations matched their experience, while discontinuation resulted from unexpected expulsion and experience of unanticipated side effects. Frequent follow-up and guidance on side-effect management influenced women's decisions to continue use. To support uptake and continued utilization of the PPIUD, postpartum contraceptive counseling should explicitly address side effects and risk of expulsion.

Keywords: Family Planning, Postpartum Copper Intrauterine Device (PPIUD), Pregnancy Protection

30. What Explains the Decline in Neonatal Mortality in India in the Last Three Decades? Evidence from Three Rounds of NFHS Surveys. *Abhishek Singh Kaushalendra Kumar and Ashish Singh.* *Studies in Family Planning*, Vol 50, No. 4, Dec 2019, Pp-337-355.

Identifying the factors that have contributed to recent declines in neonatal mortality in India may help determine which policies and programs are most likely to facilitate further reductions. We use data from the 1992–93, 2005–06, and 2015–16 National Family Health Surveys (NFHS) to examine trends in neonatal mortality in India. We use multivariable decomposition to estimate the contribution of different factors to the change in neonatal mortality in India in the last three decades. When limited to most recent births in the 1–47 months preceding the surveys, 70 percent of the decline in neonatal mortality from 1992–2016 is due to changes in utilization of maternal- and child-care program factors and distribution of household, mother's, and child's characteristics. Improvement in "mother's schooling" and increase in utilization of "at least two tetanus toxoid injections" contributed the most followed by the increase in use of "at least three antenatal-care visits" and "clean fuel for cooking." The change in distribution of "birth order" also contributed significantly to the decline in neonatal mortality. Change in the benefits of "access to improved water," "delivery in a medical facility," and "mother's schooling" has led to a decline of 3 points, 2 points, and 1 point, respectively. More investments in maternal- and child-health programs (including family planning) and providing clean fuel for cooking are likely to pay higher dividends.

Keywords: Family Planning, Birth Order, National Family Health Surveys (NFHS), Neonatal Mortality, India

Fertility

31. Spacing, Stopping, or Postponing? Fertility Desires in a Sub-Saharan Setting. Sarah R. Hayford and Victor Agadjanian. *Demography*, Vol 56, No. 2, Apr 2019, Pp-573–594

A growing body of research has argued that the traditional categories of stopping and spacing are insufficient to understand why individuals want to control fertility. In a series of articles, Timæus, Moultrie, and colleagues defined a third type of fertility motivation—postponement—that reflects a desire to avoid childbearing in the short term without clear goals for long-term fertility. Although postponement is fundamentally a description of fertility desires, existing quantitative research has primarily studied fertility behavior in an effort to find evidence for the model. In this study, we use longitudinal survey data to consider whether postponement can be identified in standard measures of fertility desires among reproductive-age women in rural Mozambique. Findings show strong evidence for a postponement mindset in this population, but postponement coexists with stopping and spacing goals. We reflect on the difference between birth spacing and postponement and consider whether and how postponement is a distinctive sub-Saharan phenomenon.

Keywords: Fertility, Fertility intentions, Fertility transition, Postponement Sub-Saharan Africa

32. Is the Family Size of Parents and Children Still Related? Revisiting the Cross-Generational Relationship over the Last Century. Eva Beaujouan and Anne Solaz. *Demography*, Vol 56, No.2, Apr 2019, Pp-595–619

In most developed countries, the fertility levels of parents and children are positively correlated. This article analyzes the strength of the intergenerational transmission of family size over the last century, including a focus on this reproduction in large and

small families. Using the large-scale French Family Survey (2011), we show a weak but significant correlation of approximately 0.12–0.15, which is comparable with levels in other Western countries. It is stronger for women than men, with a gender convergence across cohorts. A decrease in intergenerational transmission is observed across birth cohorts regardless of whether socioeconomic factors are controlled, supporting the idea that the family of origin has lost implicit and explicit influence on fertility choices. As parents were adopting the two-child family norm, the number of siblings lost its importance for having two children, but it continues to explain lower parity and, above all, three-child families. This suggests that the third child has increasingly become an “extra child” (beyond the norm) favored by people from large families.

Keywords: Intergenerational transmission, Fertility, Family size, Parents, Children, Gender

Healthcare

33. Dynamically accepting and scheduling patients for home healthcare. *Mustafa Demirbilek, Juergen Branke and Arne Strauss.* Health Care Management Science, Vol 22, No.1, Mar 2019, Pp-140-155

The importance of home healthcare is growing rapidly since populations of developed and even developing countries are getting older and the number of hospitals, retirement homes, and medical staffs do not increase at the same rate. We consider the Home Healthcare Nurse Scheduling Problem where patients arrive dynamically over time and acceptance and appointment time decisions have to be made as soon as patients arrive. The objective is to maximise the average number of daily visits for a single nurse. For the sake of service continuity, patients have to be visited at the same day and time each week during their episode of care. We propose a new heuristic based on generating several scenarios which include randomly generated and actual requests in the schedule, scheduling new customers with a simple but fast heuristic, and analysing results to decide whether to accept the new patient and at which appointment day/time. We compare our approach with two greedy heuristics from the literature, and empirically demonstrate that it achieves significantly better results compared to these other two methods.

Keywords: Home Healthcare, Optimisation, Heuristics, Simulation

34. A decision support system for real-time scheduling of multiple patient classes in outpatient services. William P. Millhiser, and Emre A. Veral. *Health Care Management Science*, Vol 22, No.1, Mar 2019, Pp-121-139.

We propose a methodology to provide real-time assistance for outpatient scheduling involving multiple patient types. Schedulers are shown how each prospective placement in the appointment book would impact a day's operational performance for patients and providers. Rooted in prior literature and analytical findings, the information provided to schedulers about vacant slots is based on the probabilities that the calling patient, the already-existing appointments, and the session-end time will be unduly delayed. The information is updated in real-time before and after every new booking; calculations are driven by each patient type's historical consultation times and no-show data, and implemented via a simulation tool based on the underlying analytical methodology. Our findings lead to practical guidelines for dynamically constructing templates that provide allowances for different consultation durations, service time variability, no-show rates, and provider-driven performance targets for patient waiting and provider overtime. Extensions to healthcare batch scheduling applications such as radiology, surgery, or chemotherapy—where patient mixes may be known in advance—are suggested as future research opportunities since avoiding session overtime and procedures' completion time delays involve similar considerations.

Keywords: Outpatient appointment scheduling, Ambulatory care services, Simulation Decision support