with varying educational attainment. Child mean Family Relationship scores across diseases were similar: 53.0 with asthma and 53.2 with diabetes, but parent scores differed significantly (56.2 for asthma; 51.1 for diabetes; $p < 0.001$). Cronbach's α was > 0.88 for parent and child reports. IRT-estimated marginal reliability was > 0.85 for children in both diseases and for parents of children with diabetes, but 0.75 for parents of children with asthma. In both asthma and diabetes, children's family relationship scores correlated significantly and most strongly with peer relationships ($\rho = 0.32$ [95% CI 0.15, 0.50] and 0.47 [0.35, 0.59], respectively); anxiety (-0.27 [-0.45, -0.09] and -0.39 [-0.50, -0.26], respectively) and depressive symptoms (-0.30 [-0.45, -0.11] and -0.40 [-0.51, -0.25], respectively). For children with diabetes, but not asthma, family relationships also correlated significantly, though less strongly, with physical health domains (pain interference -0.25 [-0.38, -0.13]; mobility 0.20 [0.06, 0.33]; pain intensity -0.25 [-0.38, -0.11]). results were similar for parent scores. Conclusions: The PROMIS Family Relationships 8-item short form was reliable in children with asthma and diabetes as well as their parents. Scores were correlated with other PROMIS domains in expected directions and magnitudes. Future work will evaluate reliability and validity using longitudinal data and extend to other pediatric chronic illnesses.

(1007) Association between Neuro-QoL scale scores and employment status in MS PATHS (Multiple Sclerosis Partners Advancing Technology and Health Solutions) patients

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Aims: Researchers have evaluated why people with MS (PwMS) prematurely leave the work force, typically assessing impact on MS-related physical and cognitive disability, inadequate community resources, and limited work-place accommodation. Less consideration has been directed to the social, emotional and symptom characteristics associated with work status. We aim to assess the association of selected social, emotional, and symptom Neuro-QoL measures with employment status, (Not Working [NW] and Working [W]) in a large cohort of working-age PwMS at 7 of the MS Care Centers in the US. Inclusion criteria targeted US residents, age 18–65 who provided complete Neuro-QoL data. Methods: MS PATHS is a collaborative network of ten healthcare institutions in the US and Europe. During routine office visits, patients used an iPad-based device to complete Neuro-QoL scales and self-reported social and health histories. An electronic adaptation of routine clinical performance measures was assessed. Descriptive statistics and logistic regression with significance $p = 0.05$ were used to assess the relationship between 9 Neuro-QoL t-scores and employment status, with adjustment for demographic and disease covariates. Selected Neuro-QoL scales included Fatigue (Fat), Disturbed Sleep(DS), Anxiety (Anx), Depression (Dep), Positive Affect (PA), Emotional and Behavioral Dyscontrol (EBD), Stigma (Stg), Ability to Participate in Social Roles and Activities (APSRA) and Satisfaction with Social Roles and Activities (SSRA). Results: The sample comprised 3017 patients. Mean (SD) age was 44.9 years. (11.3) and mean disease duration 11.0 years. (8.6); 74.5% were female and 85% were white; 953 (31.6) were not working. Bi-variate analysis demonstrated that patients NW demonstrated statistically significant ($p > 0.0001$) poorer functioning compared to those W for all Neuro-QoL t-scores. The t-score differences for those NW were worse by > 5 points ($> 1/2$ SD) (range 6.0 to 7.4 point differences.) for Fat, DS, Stg, APSRA and SSRA. Logistic regression indicated that, after adjustment for socio-demographic and clinical measures, a 10-point higher APSRA (OR 0.579, 95%CI [0.46, 0.73], $p < 0.0001$) or SSRA (OR 0.702, 95% CI [0.055, 0.90], $p < 0.0059$) was associated with lower odds of NW. Conclusions: These data demonstrate that NW is associated with reduced social participation and satisfaction but do not indicate which social, emotional or symptoms factors precede NW.

(1008) Down and out? Work and welfare trajectories among a cohort of Norwegian long-term social assistance recipients with complex health problems and low quality of life

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Aims: Previous research has found that a large proportion of Norwegian long-term social assistance recipients (LSR) have complex health problems and low quality of life. This suggests that social assistance, a means tested and temporary economic benefit, was not adequate. In this study, we investigate the trajectories experienced by a cohort LSR through the Norwegian welfare system during a period of reform. The aim of this paper is twofold: (1) To investigate overall empirical patterns of welfare and work trajectories among LSR, and (2) to identify the trajectories typically experienced by LSR with complex health problems and low quality of life. Methods: The current study combines data from a previous cross-sectional survey "Functional ability among long-term social assistance recipients" conducted in 2005 with longitudinal administrative data for the period 2005–2013, obtained from Statistics Norway. The study includes 551 recipients from 14 rural and urban municipalities in different parts of the country. We used STATA to perform sequences analysis, resulting in four distinct clusters consisting LSR having experienced equivalent pathways of income maintenance. Results: The sequence analysis detected four clusters of trajectories: (1) those who continue on social assistance, (2) those who made the transition to work assessment allowance, (3) those who became disabled and received a disability pension, and (4) those who made the transition in to paid work. The correlation analysis shows that those who became disabled reported significantly lower general health ($r = -0.2159$) in 2005, while those made the transition in to paid work reported significantly higher ($r = 0.2567$) general health in 2005. In addition, those who started working reported significantly higher on quality of life ($r = 0.1982$) in 2005. Conclusions: The results indicate that better quality of life and general health score predicts transitions into paid work.

Student & New Investigator Poster Award Finalists

New Investigator Poster Award Finalists

(2003) Measurement invariance between black and white dialysis patients and normative scores for the general dialysis population in the United States on the Kidney Disease Quality of Life 36-item short-form survey (KDQOL-36)

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Aims: This study examined measurement invariance of the Kidney Disease Quality of Life 36-item (KDQOL TM-36) Burden of Kidney Disease (BKD), Symptoms and Problems with Kidney Disease (SPKD), and Effects of Kidney Disease (EKD) scales between Black (n = 18,404) and White (n = 21,439) US dialysis patients surveyed between 2015 and 2016. Then, these data were used to calculate normative scores for each scale for the US dialysis population. Methods: Measurement invariance analyses were conducted with multiple group confirmatory factor analysis, examining increasingly restrictive levels of invariance: a Configural Model (invariant factor structure), a Metric Model (invariant factor loadings), and a Scalar Model (invariant intercepts). Criteria for determining measurement invariance included non-significant χ^2 tests, > 0.002 difference in the models' comparative fit index (ΔCFI), > 0.015 in root mean squared error of approximation and standardized root mean square residual. In addition, starting with a fully invariant model, we freed parameters (loadings and thresholds) item-by-item to determine if differential item functioning (DIF) impacted latent scale means. To calculate normative mean scores for the BKD, SPKD, and EKD, we calculated survey weights to match this sample to the joint distribution of key clinical characteristics of the US dialysis population (n = 443,947). KDQOL-36 scales' scores range between 0 and 100. Higher scores indicate better health-related quality of life (HRQOL). Results: χ^2 tests between all models were significant, and the ΔCFI evidenced non-invariance between the Metric and Scalar Models (ΔCFI = 0.006), but this DIF was reduced to 0.001 when intercepts were freed for the BKD and SPKD scales. In comparison to means of 0 in the White group, standardized factor means for Black group on the BKD, SPKD, and EKD scales were 0.218, 0.061, and 0.161, respectively. When loadings and thresholds were released sequentially, differences in factor means ranged between 0.001 and 0.048. The normative mean (95% CI) scores for the overall sample were: BKD = 52.8 (52.6–53.1); SPKD = 79.0 (78.9–79.2); and EKD = 74.1 (74.0–74.3). Conclusions: Despite evidence of DIF, impacts on estimated kidney-targeted HRQOL with the KDQOLTM-36 appear to be minimal. Normative scores can be used as reference values in research and clinical assessment.

(2005) Psychometric properties in the face of missing data - a simulation study assessing the effect of missing data on test–retest reliability in diary studies

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Aims: In symptomatic conditions, day-to-day variability results in high within-subject variance making it advantageous to build up a picture of the patient's condition over multiple days. In line with this, clinical trials are increasingly using daily diaries to collect symptom or health related quality of life information (HRQOL) to derive efficacy endpoints. Missingness in data obtained from daily-diaries can affect the clarity of the collected information. Furthermore, the underlying missingness mechanism can further distort the meaning behind the non-missing results. This study Aims: to assess (1) whether the pattern of missingness (missing at Random (MAR) or missing not at random (MNAR)) affects the reliability of the measure over time, and (2) how many days of missing data need to be present to retain an acceptable reliability statistic. Methods: The data used in the analyses were 1000 datasets created to simulate participant pain scores on an 11-point Numeric Rating Scale (NRS) collected over a 7-day period, using actual treatment level clinical data as the base dataset. Weekly scores are summarized as average pain over the 7-day period. For each simulated data set, cases were then omitted using MAR and MNAR approaches for 10, 20, 30, or 40% of the population, with 2-days, 3-days, 4-days, or 5-days missing.Test–retest statistics (ICC) for each dataset were created and compared against (1) accepted psychometric thresholds (2) base simulation data without missingness and (3) a complete cases simulation whereby participants with missingness were removed. The Bias, Type I and Type II error rate were assessed for all missingness levels (10–40% of the sample) and all levels of missing days (2–5 days). Results: Variability in weekly average scores increases with additional missingness. Therefore, the level at which missing data impacts the psychometric properties is associated with the proportion of the sample experiencing missing data, the number of missing days for individual participants and the missingness mechanism. However, data suggests high tolerance for missingness before the psychometric properties are noticeably impacted. Conclusions: Although it is important to avoid missing data, the complete removal of cases can be more harmful to the psychometric properties of an instrument than using available data.

(2007) Effects of parental psychopathology on reports of child health-related quality of life

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Aims: To test whether elevated levels of depressive and anxiety symptoms affect reports of child health-related quality of life (HRQL) in parents of children with mental disorder. Methods: A sample of 114 children, who screened positive for mental disorder using the Mini International Neuropsychiatric Interview were studied. Parents' depressive symptoms were measured using the Center for Epidemiological Studies Depression Scale (CES-D) and anxiety symptoms using the State Trait Anxiety Inventory (STAI). To examine whether parental psychopathology moderated their reports of child HRQL (using the KIDSCREEN-27), a series of multiple regression analyses with product-term interactions were conducted, adjusting for relevant confounding variables. Regression models adjusted for the potential confounding effects of child and parent age and sex, child mental disorder (internalizing or externalizing), parent immigrant and marital status, and annual household income. Results: Parents reports higher HRQL compared to children, which were significant for the domains of psychological well-being ($p < 0.001$), social support and peers ($p < 0.001$), and school environment ($p = 0.003$). Significant qualitative interactions were found for the moderating effect of parental depressive [$\beta = 0.025$ (0.007, 0.042)] and anxiety symptoms [$\beta = 0.033$ (0.011, 0.054)] on the domain of child social support and peers relations. A quantitative interaction was found for depressive symptoms on physical well-being domain [$\beta = -0.017$ (-0.031, -0.003)]. Conclusions: Symptoms of depression and anxiety in parents influence their reports of the HRQL of their children with mental disorder, particularly in the areas of physical well-being and social support and peers. Given the importance of patient-reported outcomes in the assessment and monitoring of children with chronic conditions, including HRQL, health professionals caring for children with mental disorder should be aware of how parental psychopathology contributes to informant bias. Future research examining why psychopathology influences parental reports of child HRQL is warranted.