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ScienceDirect

Nurs Outlook 67 (2019) 115–117

Nursing Outlook

www.nursingoutlook.org

State of the Science Congress on Nursing Research-Precision Health-2018

Abstracts of Distinction

Analysis of the Patient Preference for Engagement Tool

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Aims: It is crucial to assess patients' individualized preferences for their engagement in healthcare to better inform the planning and delivery of precision healthcare. Unfortunately, engagement efforts are often not tailored to individual patient situations, leading to patient frustrations and poor patient-centered care. The purpose of this study was to assess the psychometric properties of the newly-constructed 27-item Patient Preference for Engagement Tool (PPET).

Methods: The sample consisted of 311 adult patients aged 18-101, who were hospitalized on 8 medical, surgical, and oncology units within a 516 bed academic Magnet®-designated hospital in the Midwestern United States. Psychometric validation was conducted by calculating content validity indices (CVIs), conducting exploratory and confirmatory factor analysis, and calculating Cronbach's alpha reliability estimates.

Results: Following exploratory factor analysis, a six-factor solution was accepted and confirmed with CFA (RMSEA = 0.057, gammahat = 0.941, CFI = 0.828). Reliability of scores on the total scale and subscales were high: Cronbach's alpha ranged from .72 - .92. All items had a CVI of 0.8 or higher. Age, number of chronic illnesses, self-rated health status, and education level were not significant predictors of subscale or total scale scores, emphasizing that patient preferences for engagement should not be assumed based on personal and illness factors.

Conclusions: Preliminary analysis demonstrates acceptable reliability and construct validity of the PPET. Future research must be done to reduce the items on the tool to create a clinically-useful tool to precisely determine patients' individual preferences for engagement in their healthcare, leading to more personalized strategies within precision healthcare.

Breastfeeding reduces risk of Type 2 Diabetes in the (PETS)

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Aims: The purpose of this study was to assess the markers for type 2 diabetes (T2D) in association with duration of breastfeeding in the Peri/ postnatal Epigenetic Twins Study (PETS).

Methods: Cross-sectional research study of children 6-7 years of age participating in the PETS (n = 94). To investigate the relationship between duration of breastfeeding and T2D markers (insulin and Homeostasis Model Assessment Insulin Resistance levels [HOMA2-IR]).

Results: Infants breastfed for more than 4 months had significantly lower mean insulin levels (22.8 pmol/L; 95% confidence interval [CI], 4.05-22.0, P = 0.005) and significantly lower mean HOMA2-IR levels (0.41; 95% CI, 0.07-0.40, P = 0.005) than the infants breastfed for less than 4 months.

Conclusions: Breastfeeding for more than 4 months protects against the risk of developing insulin resistance associated with the development of T2D in the PETS children, supporting the idea that T2D may be partially programmed by nutrition in early life. Understanding the interactions of nutrition with our epigenome may allow healthcare providers to tailor education and interventions focused on early life nutritional habits to prevent T2D.

Choosing Wisely in Critical Care: National Survey Results

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Overview: A component of precision medicine is aimed at providing individualized medical treatments for patients. However, over-utilization of tests, treatments, and procedures is common.

Aims: The purpose of this study was to assess how critical care clinicians were individualizing patient care and implementing *Choosing Wisely®* recommendations in clinical practice.

Methods: A descriptive survey methodology was used with Research Electronic Data Capture (REDCap). The survey, consisted of 6 questions assessing if the respondent was familiar with the *Choosing Wisely®* initiative and if so, what recommendations had been implemented in clinical practice.

Results: A total of 2,520 responses were received from nurses (61%, n = 1538), physicians (25.9%, n = 647), advanced practice providers (10.5%, n = 263), and pharmacists (2.1%, n = 52). Overall, 1,273 (50.6%) respondents were familiar with the *Choosing Wisely®* campaign. Respondents reported that *Choosing Wisely®* recommendations had been integrated in a number of ways including being implemented in clinical care (N = 817, 72.9%), through development of a specific clinical protocol or institutional guideline (n = 736, 65.7%), through development of electronic medical record orders (n = 626, 55.8%), or with integration of longitudinal tracking using an electronic dashboard (n = 213, 19.0%).

Conclusions: Conclusions: The results of this national survey identify the application of the *Choosing Wisely®* recommendations to clinical practice for critical care clinicians. As only half of the respondents report implementation, additional strategies are needed to promote the *Choosing Wisely®* recommendations to make impactful change to improve care in critical care settings.

Family Management of Down Syndrome: Cross-Cultural Perspectives

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Aims: With a worldwide incidence of one in every 1000 – 1100 live births, Down Syndrome (DS) is the most common genetic cause of intellectual disability. How families incorporate the child's special needs into everyday family life (family management) influences both child and family adaptation. The purpose of this analysis was to assess the internal consistency reliability of seven translations of the Family Management Measure (FaMM) and to examine cross-cultural differences in family management of DS.

Methods: 2740 parents of individuals with DS (2387 mothers and 353 fathers) from 11 countries completed the 53-item FaMM as part of a cross-cultural study of adaptation in families of individuals with DS. Selected descriptive statistics were computed. Reliability was assessed using Cronbach's alpha. Cross-cultural comparison of family management was addressed by rank ordering FaMM subscale means with a higher rank indicating greater ease in family management.

Results: Parents from Portugal, Spain and the US had mean scores reflecting greater ease in family management across all FaMM subscales; parents from Ireland, Italy, Korea, and Thailand had mean scores across all FaMM subscales indicating more problematic family management. The rankings for Brazil, Netherlands, and United Kingdom reflected areas of both management ease and difficulty.

Conclusions: Findings from this study suggest there are cross-cultural differences in family management of DS. More research is needed to fully understand if these differences are related to social determinants of health such as culture, societal attitudes towards DS and national approaches to integrating non-invasive prenatal testing into clinical practice.

Genetic Variations Hasten Decline in Young Onset Dementia

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Aims: There is increasing interest in the influence of single nucleotide polymorphisms (SNPs) on the trajectory of cognitive decline in dementia. We evaluated the hypothesis that rs1768208 risk allele copies are associated with cognitive decline in behavioral variant frontotemporal degeneration (bvFTD), a common form of young-onset dementia.

Methods: Forty-three individuals diagnosed with bvFTD (mean baseline age = 60.1 years ±7.7, mean disease duration at baseline 3.6 years ± 2.2, mean baseline MMSE 26.2 years ± 7.1) were studied. All subjects had at least 2 verbal fluency observations to assess executive function. Patients were genotyped for rs1768208 using a custom pan-neurodegenerative disease SNP genotyping panel and were coded according to the number of risk (T) alleles (0,1,2). Linear mixed-effects models assessed the effect of genotype on performance changes over time. To evaluate the neuroanatomic basis for longitudinal decline, regression analyses related performance change in executive function to grey matter (GM) and white matter (WM).

Results: There was a significant dose-dependent genotype by time interaction ($F[2, 29] = 8.42$; $p = 0.001$) for declining performance on verbal fluency (B values refer to words per month): 2 risk alleles ($B = 0.48$; $p<.0001$), 1 risk allele ($B = 0.23$; $p = 0.0036$), and no risk alleles ($B = 0.05$; $p = 0.4822$). Furthermore, longitudinal