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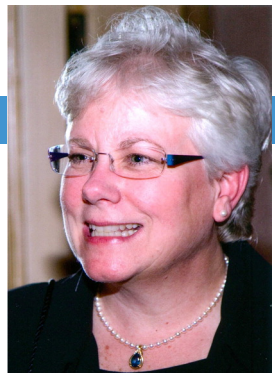

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RESEARCH COMMENTARY DEPARTMENT

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Translational Research – Transforming the Quality of Pediatric Nursing Practice

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TRANSFORMING THE QUALITY of pediatric nursing practice is achieved through translational research. Generating knowledge through clinical nursing research improves nursing practice through the development of new evidence (Polit & Beck, 2012). New evidence leads to new strategies that have been implemented and tested through research and then translated into practice (Christian, 2013b). This iterative cycle of testing interventions and translating evidence into practice serves to advance and transform nursing practice. Thus, evidence from research and quality improvement projects is translated into everyday practice to improve the care of children and their families. Indeed, evidence-based practice improves the quality of health outcomes (Melnyk & Fineout-Overholt, 2011), resulting in improved care for children and their families (Hockenberry & Wilson, 2011). As a result, evidence that is translated to pediatric nursing practice improves not only the quality of care, but also the quality of health outcomes for children and their families (Christian, 2012a, 2012b, 2013a, b,c,d). Consequently, the pediatric nursing practice landscape is transformed through the development of new intervention strategies that are designed to improve the care of children and their families (Christian, 2013c).

In this issue of the *Journal of Pediatric Nursing*, nine articles highlight the importance of translational research for the development of new evidence to improve care for children and their families, as well as improve the quality of pediatric nursing practice by: (a) conducting an integrative review to determine the impact of telemedicine on management of type 1 diabetes among school-age children and adolescents; (b) exploring pediatric fasting times before surgical and radiologic procedures to determine whether fasting (NPO) orders were in compliance with national evidence-based guidelines; (c) determining the effectiveness of a school-based pedometer intervention program to improve self-efficacy, physical activity, body composition (BMI), and aerobic fitness for students in two rural middle-schools; (d) implementing a quality improvement (QI) project to determine the most effective and least traumatic method of airway clearance for young children hospitalized with bronchiolitis; (e) exploring chronic sorrow in parents of premature twins hospitalized in a neonatal intensive care unit (NICU); (f) identifying infants with poor social-communication development associated with autism spectrum disorders (ASD) through early screening in Israel; (g) identifying risk factors for child abuse in Israel; (h) exploring pediatric nurses' perceptions of the impact of pediatric nursing certification on quality of care; and (i) determining the effectiveness of the Pediatric Nursing Certification Board's No Pass, No Pay (NPNP) pediatric nursing certification program in increasing pediatric nursing certification rates and the quality of care.

Testing interventions and translating evidence into practice is an iterative cycle that advances and transforms pediatric nursing practice to improve the quality of health outcomes for children and families.

Each of these articles in this issue of the *Journal of Pediatric Nursing* provides new evidence for translation into practice:

- An integrative review was conducted to determine the impact of telemedicine on management of type 1

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diabetes among school-age children and adolescents (Guljas, Ahmed, Chang, & Whitlock, 2014). Of the 87 articles that were retrieved from a search of the published literature between 1990 and 2013, eight studies ($N = 8$) met the inclusion criteria, and four of these were reports of randomized controlled trials (RCTs). A variety of telemedicine techniques were employed, including six studies that employed modems or mobile phones to transmit blood glucose levels, as well as one study utilizing an automated text messaging systems, and another study with a computer-guided educational program. Telemedicine was found to be effective in maintaining glycemic control (e.g., blood glucose or HbA1c) in six of the eight studies.

- Pediatric fasting times before surgical and radiologic procedures at an urban level I pediatric trauma center were evaluated through a descriptive exploratory study to determine whether fasting (NPO) orders were in compliance with national evidence-based guidelines developed by the American Society of Anesthesiologists (ASA) (Williams et al., 2014). Of children ages 1 day to 21 years, ($N = 219$) admitted to six inpatient acute care units, 112 (51.14%) children had surgical procedures, and 107 (48.85%) had radiologic procedures. Significantly more procedures were unscheduled for surgical ($n = 75$) as compared to the radiologic ($n = 46$) procedures ($p < .000$). The majority of NPO orders were non-compliant with the ASA guidelines for solid feedings (62%), with significantly greater non-compliance for the surgical group as compared to the radiologic group ($p < .033$). Moreover, the written NPO orders were 100% non-compliant with the ASA fasting guidelines for breast milk and 97% non-compliant for clear liquids for both surgical and radiologic groups of children. Thus, findings from this study demonstrated that pediatric patients experienced prolonged fasting prior to surgical and radiologic procedures and the majority of NPO orders were non-compliant with the ASA fasting guidelines.
- The effectiveness of a 12-week, school-based pedometer intervention program to improve self-efficacy, physical activity, body composition (BMI), and aerobic fitness of students (ages 11 to 13 years, $N = 116$) was explored comparing students from two rural middle-schools using a two-group, experimental design (Manley et al., 2014). No significant differences in self-efficacy, physical activity, relative BMI, and aerobic fitness were found between adolescents who participated in the pedometer intervention program ($n = 55$), when compared to those students in the control school ($n = 61$). Of the total sample of students, 56.9% ($n = 66$) were identified as normal weight, with 13.8% overweight ($n = 16$) and 29.3% obese ($n = 34$). Moreover, the intervention group had significantly higher relative BMIs (RBMI) when compared to the control group ($p < .05$). However, significant associations among major variables were found with improved self-efficacy weakly associated with increased physical activity ($r = .269, p < .004$) and aerobic fitness ($r = .236$, $p < .013$), while decreased RBMI was moderately associated with increased aerobic fitness ($r = -.493$, $p < .000$) and weakly associated with increased physical activity ($r = -.361$, $p < .000$) and improved self-efficacy ($r = -.243, p < .009$).
- An interdisciplinary QI project was implemented at a small, community pediatric hospital to determine the most effective and least traumatic method of airway clearance for children younger than 2 years old hospitalized with bronchiolitis (Jarvis et al., 2014). The QI project was implemented to educate nurses, respiratory therapists, and hospitalists about the change in the airway clearance protocol and to compare the effectiveness of nasal aspiration (NA) and nasopharyngeal suctioning for airway clearance in children with viral bronchiolitis over a 2-year period (year one, $n = 771$; year two, $n = 548$). Significant differences were found for NP suctioning of individual patients, which decreased from 30% in year one ($n = 561$) to 19% in year two ($n = 294$) ($p < .01$), representing an 11% decrease in deep NP suctioning. Inpatient acuity was found to be significantly higher in year two as compared to year one ($p < .01$). However, length of stay ($p = .593$) and hours on IV fluids ($p = .643$) were not significantly different for years one and two.
- A case study of twin infants born prematurely at 25-weeks with serious health conditions and hospitalized in an NICU for 3 months was used to illustrate the middle range nursing theory of chronic sorrow as experienced by parents (Vitale & Falco, 2014). The exemplar case study illustrates the practical application of the theory of chronic sorrow by providing guidance to nurses in assisting parents in coping with the emotional turmoil and feelings of fear, helplessness, and sadness associated with their seriously ill infants in an NICU.
- The feasibility and validity of early screening for identifying infants with poor social-communication development associated with ASD was explored in a well-baby clinic system in Israel (Ben-Sasson, Habib, & Tirosh, 2014). Parents ($N = 583$) of infants at 12 months of age who attended well-baby clinics completed the FYI-L parent questionnaire for ASD screening. From this sample, 10 infants (2.6%) who were identified as at-risk on the FYI-L and a subset of 12 infants who passed the FYI-L were then evaluated with the Autism Observation Scale for Infants (AOSI) and the Mullen Scales of Early Learning (MSEL). The at-risk group of infants (FYI-L) was found to have significantly higher scores for ASD (AOSI) ($p < .05$), and significantly lower scores for gross motor ($p < .05$) and receptive language ($p < .05$) subscales (MSEL), as compared to infants in the control group. Thus, the ASD screening procedure was determined to be effective at identifying infants with poor social-communication development at 12 months of age.