



Contents lists available at ScienceDirect

Journal of Pediatric Nursing

journal homepage: www.pediatricnursing.org

Translational research – Sustaining pediatric nursing excellence when confronted with the COVID-19 pandemic: Anxiety and stress among parents, children, and pediatric nurses

Becky J. Christian, PhD, RN, FNAP, FAAN

Professor and PhD Program Director, School of Nursing, The University of Kansas, Kansas, USA

The impact of the COVID-19 pandemic created additional anxiety and stress for parents, their children, and families as they coped with the anxiety and stress associated with managing chronic conditions, hospitalization and surgery, as well as the stress of their everyday lives (Christian, 2022). Further, the pandemic challenged nurses to adapt nursing care practices and compelled rapid change in the healthcare system. Challenges to current nursing practice were confronted, while pediatric nurses struggled to sustain pediatric nursing excellence through the provision of quality care to parents, children, and their families.

Given the stressful conditions created by the COVID-19 pandemic, pediatric nurses struggled to manage anxiety and stress among parents, their children, and families. This stressful healthcare environment was compounded by the anxiety and stress experienced by pediatric nurses with respect to the COVID-19 pandemic. As a result, this stressful environment created the need for creative solutions and innovative strategies to resolve challenging pediatric nursing practice problems. By employing creative thinking, pediatric nurses were able to assist parents, their children, and families in managing their anxiety and stress. In this way, pediatric nurses were able to sustain pediatric nursing excellence through innovative methods and care practices resulting in high quality of care despite the pandemic.

To address these healthcare challenges, nursing research generates evidence and quality improvement projects implement innovative interventions and processes to improve health outcomes (Hockenberry et al., 2019; Melnyk & Fineout-Overholt, 2018; Polit & Beck, 2021). With the challenge of the COVID-19 pandemic, new strategies and perspectives were required to meet the demands of difficult pediatric nursing practice problems. Moreover, changes in the healthcare system were required to sustain excellence in pediatric nursing care. In this way, the translation of new evidence and innovative interventions into pediatric nursing practice results in improved health outcomes for children, their parents, and families (Christian, 2013, 2015).

In this issue of the *Journal of Pediatric Nursing*, the articles present research evidence focused on anxiety and stress among parents, children, and pediatric nurses with respect to the overwhelming impact of the

COVID-19 pandemic, as well as outcomes of innovative quality improvement projects, as follows:

- The Society of Pediatric Nurses (SPN) Pediatric Nursing Excellence Model was developed to provide a framework for differentiating excellence in pediatric nursing as well as identifying quality indicators (McDowell et al., 2023). Based on the 2020 SPN project to define the construct of excellence in pediatric nursing, pediatric-specific quality indicators were identified and the Pediatric Nursing Excellence (PNE) model was created. The process of model development included five phases. Phase 1 – Identification of concepts and definitions by the SPN expert pediatric nursing task force resulted in identification of 23 concepts describing pediatric nursing excellence. Phase 2 – Collection of pediatric nurse feedback via online survey ($N = 1046$) to rank the top 10 concepts. Phase 3 – Identification of domains, concepts, and relationships between PNE components resulted in 15 defined concepts that were reduced to five domains of pediatric nursing (e.g., engagement, values, principles, care delivery, and continuous improvement). Phase 4 – Verification of PNE model concepts was confirmed through focus groups of SPN members ($n = 32$) with thematic analysis of transcripts. Analysis indicated that another concept, developmentally-appropriate care, should be added as a core domain. A visual graphic of the PNE model was developed based on the identified domains. Phase 5 – Final verification of the PNE model was presented to SPN members with responses from pediatric nurse members ($n = 76$). The overwhelming majority of respondents (95%) identified that the PNE model reflected excellence in pediatric nursing with the core domain as developmentally-appropriate care. Thus, the PNE model provides a framework for defining excellence in pediatric nursing, as well as for identifying pediatric-specific quality indicators to guide pediatric nursing practice.
- An exploratory, descriptive qualitative study of pediatric nurses was conducted during the first calendar year of the COVID-19 pandemic (MacKay et al., 2023). A national online survey was employed through SPN membership to explore the experiences pediatric nurses ($N = 231$; 97% female; 92.2% non-Hispanic white) during the initial calendar year of the COVID-19 pandemic. Seven open-ended questions were included on the survey and responses were analyzed using thematic analysis. All participants were experienced pediatric nurses (RNs) with the majority (63.2%) having ≥ 10 years of RN experience.

E-mail address: bchristian2@kumc.edu (B.J. Christian).

- The majority of participants had BSN degrees ($n = 136$, 58.9%); or graduate degrees in nursing, including 27.7% Master's degrees ($n = 64$), and 3.9% doctoral degrees ($n = 9$). Pediatric nurses practiced in a variety of clinical settings; 69.7% of pediatric nurses worked on a unit with COVID-19 positive patients, although 46.8% of nurses had not provided direct care. Thematic analysis revealed seven themes that described the experiences of pediatric nurses during the pandemic: (a) *Unique aspects of COVID-19 in the pediatric population*; (b) *Visitor restrictions and isolation increased stress*; (c) *Navigating changing knowledge and misinformation*; (d) *Personal protective equipment challenges*; (e) *Living in fear*; (f) *Pride in the Profession*; and (g) *Profession at risk*. Thus, the results of this study highlighted the challenges for pediatric nurses in providing care for COVID-19 positive patients, as well as their commitment to the profession of nursing, the issue of retention of nurses, and the need for self-care.
- A retrospective cohort study of parents of critically ill children hospitalized in the pediatric intensive care unit (PICU) in a large academic medical center was conducted to describe differences in parental anxiety and family distress with respect to changes in hospital visitation policies during the COVID-19 pandemic (Bloxham et al., 2023). Hospitalized children (mean age 4.9 years, SD 5.4; range birth to 16.8 years) were diagnosed with respiratory (37%), cardiovascular (30%), and medical-surgical (33%) critical illnesses. Parents ($N = 82$; 95% non-Hispanic white, 5% African American) were surveyed online and participants were divided into three groups based on dates of hospitalizations and parental presence and visitation policies in the PICU: Unrestricted-Pre-COVID-19 ($n = 40$), restricted-COVID-19 visitation ($n = 15$), and relaxed semi-restricted COVID-19 ($n = 27$) visitation policies. Statistically significant differences in diagnoses were found among the three groups ($p = 0.0068$) with the unrestricted group having children with more respiratory conditions (63%). Group differences were found with respect to being allowed to have a second parent visit their child in PICU ($p = 0.0068$), with 33% of parents from the restricted group reported not being allowed to have the other parent visit as compared to 3% in the unrestricted group. No significant differences were found among groups of parents with respect to levels of anxiety. Thus, parents with children hospitalized in the PICU had high levels of anxiety due to their children's condition rather than as a result of the restricted visitation policies due to COVID-19.
 - A quality improvement project was implemented to increase the duration of Kangaroo Mother Care (KMC) for stable preterm and low birthweight neonates (LBW) in the neonatal intensive care unit (NICU) of a tertiary care institute in South India during the COVID-19 pandemic (Jain et al., 2023). Multiple plan-do-study-act (PDSA) cycles were used to assess, implement, and evaluate the effectiveness of the intervention. At baseline prior to implementation, in-depth interviews were conducted with mothers ($n = 9$) and nurses ($n = 34$) to determine mean duration of KMC and to identify barriers to KMC in the NICU. Two plan-do-study-act (PDSA) cycles (3-weeks) involved: (1) educating mothers and nurses, and (2) KMC technique and neonatologist resident orders. Evaluation of the intervention for sustainability occurred through monitoring of the outcomes for 10-weeks. The KMC participants ($N = 74$) included mothers and their preterm infants who received KMC at baseline ($n = 9$), during PDSA cycle-1 ($n = 27$), PDSA cycle-2 ($n = 12$), and during the sustainability phase at 10-weeks post-implementation ($n = 26$). Results indicate that the median hours of KMC duration increased from 2.6 h/day at baseline to 5.5 h/day at the end of PDSA cycle-2 to 6.1 h/day at the 10-week follow-up. Thus, the QI project demonstrated increased duration of KMC among preterm and low birthweight neonates in South India.
 - A cross-sectional study was conducted with Israeli-born, Jewish parents to obtain their attitudes and views about coronavirus (COVID-19) vaccinations for healthy children (ages 5 to 18) using a semi-structured survey (Savitsky et al., 2023). Parents ($N = 138$) were predominantly female ($n = 62$; mean age 38.9 years, SD 8.6; range 32 to 46 years), well-educated (Bachelor's degree 52.7%; Master's/PhD degree 27.9%), employed in non-healthcare ($n = 83$, 60%) and healthcare ($n = 55$, 40%) and less religious (65.2% secular/traditional and 34.8% religious/orthodox). Lower religiosity and non-adherence to routine vaccination guidelines (OR = 3.91, 95% CI: 1.12–6.96) were significantly associated with the intention not to vaccinate their children for COVID-19. Parents who were non-adherent to routine vaccination guidelines for children were almost five times more likely not to vaccinate their children for COVID-19 (OR = 4.82, 95% CI: 1.83–12.71). Greater social influence scores were associated with lower intention to vaccinate their children for COVID-19 (OR = 0.40, 95% CI: 0.20–0.80). Parents who did not intend to vaccinate their children identified barriers to intention to vaccinate as fear of potential side effects, vaccine novelty, and lack of belief in effectiveness. Thus, parents' attitudes about vaccination influenced their intention to vaccinate their children for COVID-19.
 - With the advent of the COVID-19 pandemic and the decline in pediatric hospital admissions, adults were admitted to pediatric inpatient units. A quality improvement project was employed to adapt pediatric medical-surgical units and PICU beds to accommodate adults (ages 19 to 30 years) during COVID-19 pandemic hospitalization (Gandora et al., 2023). Three plan-do-study-act (PDSA) cycles were used to implement and evaluate the effectiveness of the intervention. A multidisciplinary team of pediatric healthcare professionals provided care to the adult patients. Adult patients ($N = 88$) were admitted to the pediatric unit over a 10-month period during the pandemic. The number of adverse safety events were not found to be significantly different pre-and post-intervention. Thus, the results indicate that the pediatric healthcare professionals were able to provide safe care for adults during the healthcare crisis of the pandemic through the innovative use of pediatric hospital units for adult healthcare.
 - A mixed-methods approach was used to explore learning outcomes of a virtual pediatric skills day (6-h) intervention with undergraduate junior nursing students during the COVID-19 pandemic in preparation for pediatric clinical (Gibson-Young et al., 2023). Junior undergraduate nursing students ($N = 93$; 91.3% female, 96.7% non-Hispanic White) were surveyed pre-and post-educational intervention to determine students' reflections about comfort, preparation, and perceptions of pediatric experiences. Statistically significant differences were found for increased perceptions of comfort ($p < 0.001$), preparedness for children ($p < 0.001$), and preparedness for family ($p < 0.001$). Qualitative themes that described what students looked forward to in pediatric clinical included: (a) interacting with children, (b) learning new skills/knowledge, (c) practical experiences, and (d) interacting with families. In contrast, themes identifying what students did *not* look forward to in pediatric clinical included: (a) confidence/readiness for working with children, (b) confidence/readiness for interacting with families, (c) confidence/unpreparedness due to COVID-19 restriction, and (d) confidence/readiness in general. Thus, the virtual pediatric skills day intervention demonstrated effectiveness in preparing undergraduate junior nursing students for their pediatric clinical experiences by building their confidence and decreasing anxiety prior to their actual clinical.
 - A cross-sectional, descriptive correlational study was used to determine the association between postoperative opioid administration and post-traumatic stress symptoms in preschool children after cardiac surgery (Davis et al., 2023). Parents or caregivers ($N = 43$; $n = 31$ biologic mothers, $n = 6$ adoptive mothers, $n = 4$ biologic fathers, $n = 2$ grandparents) participated in the survey. Preschool children (ages 3 to 6 years; 21 female, 22 male) were predominantly White (74.4%; 11.6% Asian, 14% Black) and diagnosed with bi-ventricular cardiac physiology (60.5%). Children with single ventricular cardiac physiology (39.5%) were significantly older at the time of cardiac surgery and had significantly longer post-operative length of stay in the ICU, as compared to those with bi-ventricular cardiac physiology. No statistically significant differences were found between postoperative opioid administration and post-traumatic stress symptoms among preschool children undergoing cardiac surgery. Interestingly, morphine administration demonstrated a significant beneficial relationship to post-traumatic stress

- symptoms for children with single ventricular cardiac physiology ($r = -0.57$, $p = 0.017$), but was not significant for children with bi-ventricular cardiac physiology. Thus, morphine had a beneficial effect on reducing post-traumatic stress symptoms for preschool children with single ventricular cardiac physiology post-cardiac surgery.
- A randomized controlled trial was conducted to determine the effect of non-pharmacologic active distraction (e.g., electronic tablet with age-appropriate games) compared to oral midazolam in reducing preoperative anxiety among preschool children (ages 3 to 5 years) in the perioperative setting (Levy et al., 2023). Preschool children ($N = 99$; 60 males, 39 females; 85% White, 4% Black, 11% Other) scheduled for elective surgery were randomly assigned to the oral midazolam group ($n = 47$) and the non-pharmacologic active distraction ($n = 52$) group. No statistically significant differences in anxiety, emergence delirium, or sedation/agitation in preschool children were found between groups. However, children in the group with active distraction (electronic tablet with games) had shorter lengths of stay than those who received the oral midazolam ($p = 0.021$). Thus, active distraction was found to be as effective in reducing preoperative anxiety as compared to oral midazolam among preschool children.
 - A qualitative descriptive study was conducted to explore parents' perceptions and decision-making experiences to participate in a clinical trial with hypoglossal nerve stimulator (HNS) implantation in adolescents with Down Syndrome and obstructive sleep apnea (Callans et al., 2023). Semi-structured open-ended interviews were conducted with parents ($N = 15$; 13 mothers, 2 fathers; 14 White, 1 Hispanic) of adolescents (6 females, 8 males; mean age 16.4 years) with Down Syndrome and obstructive sleep apnea. Content analysis was used to identify three primary themes, as follows: (a) Parents experience desperation about acceptance of standard of care; (b) Desperation led many parents to seek out information and insights from social media; and (c) Parents want to share their experience and educate others about the benefits of (HNS) implantation. Thus, the results suggest that nurses can educate parents about the benefits of (HNS) implantation for adolescents with Down Syndrome and obstructive sleep apnea and the importance of social media to assist parents in decision-making.
 - Parents ($N = 91$) of children (ages 4 to 8 years) were surveyed to about their child's health habits and perception of weight status (Knafel et al., 2023). A conversation starter tool "Healthy Habits for Kids" handout was developed to improve health habits in young children. Parent participants were assigned to the intervention group ($n = 40$; 92.5% non-Hispanic White, 2.5% Hispanic, 0% non-Hispanic Black, 5% Other) and the comparison group ($n = 39$; 74.4% non-Hispanic White, 15.4% Hispanic, 5.1% non-Hispanic Black, 5.1% Other). There were no statistically significant differences between groups for use of healthy habits for young children although health habits improved for both groups. Parents' perceptions of their child's weight status was unchanged with only 18.5% ($n = 5$) of parents correctly identifying their child as overweight, while 81.5% of parents ($n = 22$) underestimated their child's weight as "healthy". Thus, the conversation starter tool is helpful intervention for discussing healthy eating and weight status for parents of young children in a pediatric primary care setting.
 - A qualitative study employing ethnographic principles was conducted with low-income, Mexican American parents and caregivers of toddlers to explore their perspectives and experiences of managing screen time use at home (Thompson et al., 2023). Low-income (97% at or below federal poverty level) parents and caregivers ($N = 32$; 21 mothers, 10 fathers, 1 grandmother) from 28 households were recruited from a federally qualified pediatric clinic. In-depth interviews were conducted in English ($n = 18$, 56%) or Spanish ($n = 14$, 44%) with participants in their homes. Directed content analysis was employed to analyze interview data focused on screen-related interactions between parents/caregivers and toddlers to identify discord, dismay, and ambivalence. Three main themes were identified: Theme – 1: Parent-child discord – Screen devices often ignite parent-child discord; Theme – 2: Parent-partner discord – Discord between parents results from toddler screen use; and Theme – 3: Internal dissonance – Parental ambivalence and dismay about toddler screen use. Thus, toddler screen use highlighted the discord and dismay among Mexican American parents and caregivers as they struggled to manage toddler screen time. The findings demonstrate the need for interventions to assist low income, Mexican American parents and caregivers in promoting healthy screen use for toddlers.
 - The development, pilot implementation, and preliminary assessment of a transition process for youth (ages 13 to 24 years) living with human immunodeficiency virus (HIV) was conducted to provide transition support for youth, caregivers, and staff (Brundrett & Hart, 2023). The multi-disciplinary team developed a transition framework and educational materials for youth and their caregivers. Based on the national transition guidelines, the transition process included four stages with competencies for youth and tasks for the healthcare team: (1) Introduction to transition, (2) Building knowledge and skills, (3) Growing in independence, and (4) Adult care ready. Participants included youth ($n = 16$), caregivers ($n = 5$), and healthcare team members ($n = 15$) who were surveyed to determine the effectiveness of the transition program. Characteristics of youth with HIV (male $n = 7$, 44%; female $n = 8$, 50%, gender fluid $n = 1$, 6%) who participated in the survey were 56% Black, 25% White, and 19% Biracial and ages 13–17 years ($n = 6$, 38%) and 18–24 years ($n = 10$, 62%). The transition framework and materials were found to be helpful by youth with HIV and caregivers to develop self-management skills and improve confidence.
 - An online survey of members ($N = 179$) of the *National Pediatric Nurse Scientist Collaborative* was conducted to determine the existing guidance for qualifications to serve as principal investigators (PIs) for pediatric nurse scientists and clinical nurses and to clarify how this guidance is operationalized in human subjects research conducted at children's hospitals (Nasr et al., 2023). The nurse scientist survey respondents ($N = 39$, 22% response rate) reported that the overwhelming majority (90%) had a PhD degree and 80% practiced in a free-standing children's hospital, 93% hospitals recognized as Magnet® status. The overwhelming majority of respondents indicated that nurse scientists ($n = 37$, 95%) and clinical nurses with or/without a master's degree ($n = 32$, 82%). Primary appointments for survey respondents included children's hospitals ($n = 23$, 59%), schools of nursing ($n = 7$, 18%), or combined ($n = 9$, 23%). Nurse scientists and other nurse clinicians were allowed to serve as PIs for research studies at children's hospitals although the educational requirements varied. However, 15% of nurse scientist respondents reported that doctorally-prepared nurse scientists were not allowed to serve as PIs of research studies conducted at children's hospitals despite the federal regulations and guidelines. Moreover, many institutions, Nursing Research Committees (NRC), and IRBs prevent nurse scientists and nurse clinicians from serving as PIs on their nurse-led research based only on education level or they require supervision and oversight of their studies. These findings identified that current policies at many children's hospitals create barriers to nurse scientists in conducting their research to advance pediatric nursing practice.
- To that end, anxiety and stress among parents, children, and pediatric nurses characterized the overwhelming impact of the COVID-19 pandemic. The outcomes of research and quality improvement projects resulted in innovative strategies to manage anxiety and stress among parents, children, and pediatric nurses, resulting in changes in pediatric nursing practice and healthcare. In this way, pediatric nurse scholars designed creative solutions to address these challenging pediatric nursing practice problems with respect to the COVID-19 pandemic in order to sustain pediatric nursing excellence.

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