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A Correlation Between Parental Visitation Neglect and Pediatric Intensive Care Unit Psychosis:

An Integrative Literature Review

Alia Mohammad

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Abstract

**Background:** Pediatric intensive care unit psychosis is a serious disorder where patients experience anxiety, hallucinations, delirium, and other symptoms, setting them back in their recovery process during their hospital stay.

**Purpose:** This study is an integrative literature review aimed at the use of evidence based practices to establish the most effective solution in preventing ICU psychosis in pediatric patients, and discovering if parental presence is a factor to successful recovery.

**Methods:** WorldCat.org, MEDLINE, ABI/INFORM Complete, Academic Search Complete, OAlster, PsycARTICLES, ERIC, Business Source Complete, and Computers & Applied Sciences Complete were searched using the keywords pediatric, intensive care unit, and psychosis.

**Results:** This topic has not been studied well however; the literature review examined various factors that impact the mental, physical, and emotional well-being of the pediatric patient in a hospital care setting.

**Conclusion:** Because both external stimuli and parental presence have unique roles in the psychosocial support of pediatric patients in the ICU setting, the nurse needs to address all aspects in providing a relaxing environment necessary for recovery. These interventions will help identify early signs and symptoms of ICU psychosis, and prevent their increase early.

**Keywords:** pediatric, intensive care unit, psychosis
**Introduction**

**Background/Significance**

Intensive care psychosis is a disorder where patients experience anxiety, hallucinations, delirium, paranoia, disorientation to time and place, agitation, and become violent. The causes of intensive care unit psychosis are related to environmental and medical conditions. For example, during a patient’s stay at the hospital, they may not be near windows, and their sleep is disturbed either by staff and/or noisy monitors. Patients are also taking one or more medications, some with serious side effects, and if pain is not controlled adequately, this could result in increased stress. All of these factors contribute to ICU psychosis. The quickest way these patients recover is if they are transferred out of the ICU. (Welker, 2016).

My review of literature concludes that delirium in the pediatric population has not been well researched. A recent study (Critical Care Nurse, 2003) found that hypoactive delirium was more common than hyperactive delirium in ICU patients, particularly because it is unrecognized in critically ill children. Common indicators of delirium in pediatric patients are impaired alertness, inattention, confusion, disturbances in sleep-wake cycles, purposeless actions, and inconsolability. Children’s coping of trauma relies heavily on a stress-free routine and parent’s presence, which is commonly disturbed in the ICU setting. (Critical Care Clinic, 2009). If parents are not visibly present to the child in the ICU the child may not receive the love and care needed in this time of stress. The child will start becoming disruptive to gain attention, or their health will slowly decay. (Horwath, 2007). Hospital staff also needs to take action in preventing ICU psychosis by placing patients in well-lit rooms that have windows, allowing family to visit and accommodating families with living and transportation means, changing patient rooms every few weeks to a month, and discharging patients as soon as possible (Cohn, 2014).
Study Problem

The American Thoracic Society (2008) advises that “Nearly one in three children admitted to pediatric intensive care will experience delusions or hallucinations, which put them at higher risk for post-traumatic stress symptoms, according to a new study of children’s experiences in a pediatric intensive care unit”. Parents are supposed to provide comfort and security in traumatic situations. If not present, the child must experience the stress by themselves.

However, there are circumstances where the parents cannot be as present as they would like to be. Everyone handles stress in different ways. Some parents are overwhelmed with their child’s situation that they physically withdraw themselves to prevent any type of attachment. This has consequences of its own, since the early bond between parent and child is non-existent. Lack of parental visitation may delay the child’s healing, as well as be “associated with suboptimal outcomes like child abuse and abandonment and adverse emotional functioning” (Reynolds et al., 2013). Neonatal Intensive Care Unit (NICU) single family rooms that required parents to visit daily for most of the day found that infants “demonstrated fewer days of hospitalization when parents were required to stay from admission until discharge” (Reynolds et al., 2013).

However, there are circumstances where the parents cannot be as present as they would like to be. In order to keep parent’s presence in the ICU, they must be provided the resources and support necessary to decrease their stress levels, and increase involvement in their child’s care. Parents are sometimes unable to stay the night with their child due to limited beds or recliner chairs, are not able to console their child due to limits placed by the nurse, cannot be present majority of the day due to the care of other children, and/or financial means such not being able
to delay work due to financial responsibilities or low socioeconomic status. The medical staff, specifically the nurses, should be conscious of these factors and try to find effective ways in finding ways to help accommodate parents and support their needs. (Reynolds et al., 2013).

**Purpose**

The purpose of this integrated literature review is to examine the effects of parental absence when children are in the intensive care unit and the onset of psychosis. This can provide an association and used to establish interventions that educate parents on the importance of parental presence when their children are in a pediatric intensive care unit. This should result in decreased delirium, depression, and post-traumatic stress disorder in pediatric patients who have experienced stays in a pediatric ICU.

**Research Questions**

1) Is there a correlation between parent visitation and psychosis for the pediatric population who have an ICU stay?

2) Do children who do not have frequent visitation from parents experience higher rates of ICU psychosis?

3) What interventions could be put into place to decrease ICU psychosis in the pediatric population?

**Conceptual Framework**

Pediatric patients may experience increased stress levels when at the intensive care unit due to their environmental and family structure. Patients are constantly disturbed by routine vital checks, medication administration, and noisy monitors. Besides a needed calm environment, parental presence is necessary to provide safety and comfort. Florence Nightingale’s
Environmental Theory states, “nursing is an act of utilizing the environment of the patient to assist him in his recovery” (Nightingale, 1860).

Nightingale’s Environmental Theory applies to the patient’s needs in this issue. Nurses need to be more attentive to pediatric ICU patients by providing adequate lighting in rooms, treating pain effectively, assessing for delirium and any other mental health complications, and providing the patient attention, especially if parental neglect is present. To promote the well-being of the patient, nurses need to educate parents about involvement in their child’s care.

Nightingale separated nursing from medicine. In this issue, it is clear that no matter how well a patient is medicated, if environmental stressors are not kept to a minimum, the patient’s health will slowly decline. (Pirani, 2016).

<table>
<thead>
<tr>
<th>S.No.</th>
<th>Four major concepts</th>
<th>Explanation by Nightingale</th>
</tr>
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<tbody>
<tr>
<td>1</td>
<td>Environment</td>
<td>Physical components of the environment include ventilation and warming, health of houses, light, noise, bed and bedding, cleanliness of rooms and walls, personal cleanliness, taking food and what food. Social and psychological environment addressed as chattering hopes and advice, petty management, observations of the sick and variety [1].</td>
</tr>
<tr>
<td>2</td>
<td>Person</td>
<td>Person is the individual who receives the nursing care. Although Nightingale did not define the person specifically, she did conceptualize person as holistic [2].</td>
</tr>
<tr>
<td>3</td>
<td>Health</td>
<td>Health does not mean to be well only but to be able to use every power the individual has. Nightingale believed “nature alone cures” [1].</td>
</tr>
<tr>
<td>4</td>
<td>Nursing</td>
<td>Nursing is viewed in two arenas. The first is defined as general nursing: she carry out the activities mentioned in canons of environment and another one is proper nursing who are educated in the art and the science of nursing. They are able to apply nursing process [2].</td>
</tr>
</tbody>
</table>

**Literature Review/Methods**

**Research Design**

The research design presented is an integrative literature review targeting the most effective interventions which can prevent intensive care psychosis in pediatric patients. To complete an integrative literature review, the researcher of the study will search to find articles
on interventions that have been applied and are appropriate for the criteria listed below. The integrative review of the literature will be guided following the framework of Whittemore and Knafl (2005). The framework will indicate the central stages of the integrative review which will be: problem identification, literature search per database, data evaluation, data analysis by chart matrix of health care promotion for preventing or decreasing the rate of pediatric intensive care psychosis. The effectiveness of each study will be analyzed and examined in order to be able to determine what needs to be done in further research in order to address the issue discussed previously. The information presented in the integrative literature review can be used by nurses as well as researchers in order to conduct further research on what needs must be addressed in order to ensure that preventative measures are taken to avoid pediatric ICU psychosis.

**Literature Search Strategies**

The literature search was done using DePaul University’s online library database. The following databases were searched: WorldCat.org, MEDLINE, ABI/INFORM Complete, Academic Search Complete, OAlster, PsycARTICLES, ERIC, Business Source Complete, and Computers & Applied Sciences Complete. They keywords that were used to search the databases were “pediatric”, “intensive care unit”, and “psychosis”.

**Literature Search Limitations and Inclusion/Exclusion Criteria**

The literature review was limited to peer-reviewed articles published between 2000 to 2015. Using the keywords “pediatric”, “intensive care unit”, and “psychosis” generated 227 articles. From the original search, WorldCat.org was examined further as it provided 221 articles. Articles that did not focus on pediatric ICU patients, ICU psychosis, as well as parental presence, were excluded, limiting the applicable sources. A final total of seven articles were reviewed that focused on the pediatric ICU psychosis, and parent presence in the ICU setting.
Data Analysis

The studies used are categorized in a chart using the following headings: authors, year, sample, type of study, objective, analytic procedure, and outcome. The studies will be compared and contrasted based on these categories. The chart presented below will show the effects of disruptions experienced during a pediatric patient’s ICU stay, and which interventions were successful in decreasing the occurrence of pediatric ICU psychosis.

Results

When examining the literature analysis, it is noted that various interventions can be implemented to both child and parent, to influence a positive and less stressful experience in pediatric intensive care units. The chart matrix provides an in-depth analysis of the information found to improve experiences, as well as deficiencies in studies used to help expand interventions. Landolt et al. (2011), provides evidence that PTSD affects both child who is a patient on an intensive care unit, and parents, causing parents to have a decrease in assisting and supporting their child through this tough time. Additionally, Janssen et al. (2011) reveals that even though there may be tools available to test for pediatric delirium, only one of the scales (PAED) is efficient enough to use at the bedside. Research conducted by Massimo et al. (2015), hospitals do not help accommodate different aged children by providing different means of entertainment and social activities, allowing increased stress and depression during their hospital stay. This literature review supports that interventions can help decrease the likelihood of both child and parent stress in the intensive care unit.
Discussion

When reviewing the various research in this study, it is clear that pediatric patients undergo extreme stress when hospitalized. It has been emphasized how important it is to control external stimuli, and include parents at the bedside to help with their child’s recovery. Several stimuli may disrupt the ICU pediatric patient’s smooth road to recovery, noise being one of the biggest factors. Research further suggested that “noise pollution” can have numerous health effects on the critically ill pediatric patient such as cardiovascular disease, agitation, and long-term impaired cognition, as well as the most obvious, unsustainable good quality sleep. Poor quality sleep has manifested the pediatric intensive care unit and has increased the risk of delirium between 12% to 47%. There have been certain measures implemented to decrease noise in the ICU such as quieter conversations, decrease equipment volume, grouping vitals and nursing tasks, closing patient room doors, setting pagers and phones on vibrate, and turning off the television. (Kawai et al., 2017).

Pediatric patients in the ICU also have increased risk of failure to thrive. Although failure to thrive can have organic causes such as hospitalization, a deficit in parental care and a distant relationship between infant and caregiver can contribute to the health of the patient. It is noted that interactions and relationships with pediatric patients are vital for their coping mechanisms in dealing with emotional stress and physical pain (Nugent et al., 2011).

In this literature review, some of the psychological and physiological strains of pediatric intensive care unit psychosis where highlighted. Researchers found that certain interventions decrease emotional stress, pain, delirium, anxiety, sleep deprivation, failure to thrive, and help improve overall quality of life.
**Limitations in the Literature Review**

This literature review was limited to the analysis of 7 research articles that specifically studied the pediatric patient population in intensive care settings, in different time periods, making it difficult to generalize review findings that are relevant in today’s hospitals. Some articles would address one issue, such as noise pollution, and not the other, such as parental presence, which also makes it difficult to tie all factors to the cause of ICU psychosis in pediatric patients, or distinguish if one factor had more of an effect than another. There was also very little information that staff and hospital implemented permanent systematic changes to reduce pediatric ICU psychosis after the studies were conducted.

**Implications on Nursing in Treatment of Pediatric Intensive Care Unit Psychosis**

The findings emphasize the importance of considering interventions to prevent ICU psychosis in pediatric patients. The data analysis shows that numerous factors contribute to ICU psychosis, the most popular being noise and parental presence. These factors contribute to the pediatric patient’s emotional and physical well-being, disrupting their ability to thrive and recover. Noise control and parental presence has consistently shown to have distinct benefits and positive effects on the overall treatment and successful outcome of pediatric patients. It is important for nurses to form a relationship with their pediatric patients, resulting in decreased stress levels in the patient, and allowing the patient to become more trusting of their caregiver. Nurses need to be active in their patients’ care and culturally competent providers when assessing patients’ needs, and also their parent’s needs. Nurses need to work with the family of the patient and provide them with resources necessary to help ease their stress, and increase their presence in their child’s care. In order to be able to implement these interventions, nurses should be educated and trained to address the needs of their patient population. Some nursing
implications include inadequate nursing staff which leads to less time spent in the patient’s room. If the nurse has several patients to assess and give medications to, then time is only spent balancing all the orders and duties. Also, family members can become protective and unwelcoming to nursing interactions and care. This can cause a barrier in communication and digress the patient’s recovery.

**Conclusion**

This review showed the causes of pediatric intensive care unit psychosis and interventions to decrease the risk through an integrative analysis of articles. Because both external stimuli and parental presence have unique roles in the psychosocial support of pediatric patients in the ICU setting, the nurse needs to address all aspects in providing a relaxing environment necessary for recovery. Future studies should continue to focus on both noise levels and parental presence during hospitalization, and if one effects stress levels in patients more than the other. Additionally, studies should focus on how prevention methods can be best used to help patients and families from different cultures and socioeconomic statuses.
### Table 2: Data Matrix

<table>
<thead>
<tr>
<th>Citation</th>
<th>Sample</th>
<th>Type of Study</th>
<th>Objective</th>
<th>Analytic Procedures</th>
<th>Outcomes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Landolt, M. A., Ystrom, E., Sennhauser, F. H., Gnehm, H. E., &amp; Vollrath, M. E. (2011)</td>
<td>A total of 287 children (aged 6.5–16 years) and their mothers (n = 239) and fathers (n = 221)</td>
<td>Quantitative</td>
<td>Presence of PTSS and PTSD and the mutual influence of child and parental PTSS in pediatric patients with different medical conditions</td>
<td>Child PTSS were assessed by the Child PTSD Reaction Index (RI). Parental PTSS were assessed by the German version of the Post-traumatic Diagnostic Scale (PDS). Chi-squared analyses were used to compare categorical variables, t-tests and repeated measurement ANOVAs for comparison of continuous variables across time and among mothers and fathers.</td>
<td>At the first assessment 11.1% and at the second assessment 10.2% of the children had moderate to severe PTSS. At 5–6 weeks 29.3% of mothers and 18.6% of fathers met criteria for PTSD. At 1 year the rates were 14.6% for mothers and 7.9% for fathers. A significant proportion of children and their parents develop clinically relevant PTSS. Children and parents seem to be affected differently by accidental injuries and the onset of severe diseases in the child.</td>
</tr>
<tr>
<td>Janssen, N. J., Tan, E. Y., Staal, M., Janssen, E. P., Leroy, P. L., Lousberg, R., . . . Schieveld, J. (2011)</td>
<td>A total of 182 non-electively admitted, critically ill pediatric patients, aged 1-17 years</td>
<td>Quantitative</td>
<td>Investigate the use of the Pediatric Anesthesia Emergence Delirium (PAED) scale, the Delirium Rating Scale (DRS-88), and the Delirium Rating Scale Revised (DRS-R-98) scale as diagnostic tools for Pediatric Delirium in the PICU</td>
<td>Data was analyzed using STATA, version 11.0. First prospective study evaluating the utility of the DRS and the PAED as assessment tools for PD in a PICU setting. The PAED is a valid instrument for PD in critically ill children, since it is easy to use at the bedside, not time-consuming, and suitable for young children as well. The DRS scales were found to be far less suitable for routine PD assessment at a PICU.</td>
<td>The PAED could be completed in 144 (93.5%) patients, much more frequently than either the DRS-88 (66.9%) or the DRS-R-98 (46.8%). The PAED should be used for PD screening at the PICU, preferably multiple times per day. Whenever a score of 8 or higher (or other scores, depending on the patient mix of the PICU in question) is obtained for a patient, a pediatric neuropsychiatrist should be consulted to assess whether the child is delirious or not.</td>
</tr>
<tr>
<td>Massimo, L., Rossoni, N., Mattei, F., Bonassi, S., &amp; Caprino, D. (2015)</td>
<td>The study sample includes 117 in-patients aged between 10 and 20 years coming from several Italian regions who were admitted to the G. Gaslini Research</td>
<td>Qualitative</td>
<td>Adolescents affected by a severe disease who undergo high-risk treatment may experience stress, pain, extreme frustration, depression, and anger. A semi-structured interview was analyzed in combination</td>
<td>Data concerning the quality of life of adolescent in-patients and their needs and expectations were collected using a tool named the QolAdol-IGG scale which consists of a semi-structured interview of 10 items and a questionnaire with 20 items. Each question was analyzed in combination</td>
<td>Seventy-two percent of adolescents found difficulty practicing normal day activities during their stay in the hospital, mostly because of the disease (40%), while 17% claimed it was due to the poor organization of the hospital, 21% to the lack of proposals/activities and places for spare time, and again 21% to limited availability of technologies.</td>
</tr>
<tr>
<td>Authors</td>
<td>Participants</td>
<td>Methodology</td>
<td>Study Details</td>
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<tr>
<td>J. (1999)</td>
<td>Children's Hospital for a period of 10 days or more, regardless of the disease</td>
<td>interview and a short questionnaire (Quality of life-adolescent-Istituto Giannina Gaslini, QoL-adol-IGG scale) is used to investigate the quality of life, the needs and expectations of adolescent in-patients.</td>
<td>with gender, age, and area of residence. It has been demonstrated that skill-building interventions can improve the physician/patient relationship and therapeutic alliance.</td>
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<tr>
<td>Yu Kawai, Y., Weatherhead, J., Traube, C., Owens, T., Shaw, B. ... Niedner, M. (2017)</td>
<td>The pediatric delirium bundle was implemented in 8 pilot patients (40 patient ICU days) while 108 non-pilot patients received usual care over a 28-day period</td>
<td>Quantitative</td>
<td>Noise pollution in pediatric intensive care units (PICU) contributes to poor sleep and may increase risk of developing delirium. The objectives are to assess the degree of PICU noise pollution, to develop a delirium bundle targeted at reducing noise, and to assess the effect of the bundle on nocturnal noise pollution.</td>
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<tr>
<td>Nugent, N., Sledjeski, E., Christopher, N., and Delahanty, D. (2011)</td>
<td>82 youths (8–18 years) who experienced accidental injury.</td>
<td>Qualitative</td>
<td>Emerging support for the roles of both early trauma and family environment in the development of dissociative symptomatology is complicated by the frequent occurrence of dysfunctional family environments and childhood maltreatment. The present investigation prospectively examined the influence of family environment on dissociative symptom course in 82 youths (8–18 years) who experienced accidental injury.</td>
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<tr>
<td>Benoit, D., Coolbear, J. (1999)</td>
<td>Participants were 57 infants (30 FTT, 27 non-FTT) and their</td>
<td>Qualitative</td>
<td>This study tests the hypothesis that infants with failure to thrive (FTT) are at risk for a Results show that more infants with FTT than infants without FTT met some of the criteria for risk for a clinical disturbance of Delirium. The present findings provide support for the importance of acute family environment in pediatric post-injury adjustment and further highlight the importance of parent resources, including income and education, in post-injury adjustment.</td>
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</table>

Bed spaces were louder during the day (10AM to 4PM) than at night (11PM to 5AM) Pilot patient rooms were significantly quieter than non-pilot patient rooms at night vs. dB. The pilot rooms compliant with the bundle had the lowest hourly nighttime average dB. Substantial noise pollution exists in the PICU, and utilizing the pediatric delirium bundle led to a significant noise reduction that can be perceived as half the loudness with hourly nighttime average dB meeting the EPA standards when compliant with the bundle.
<table>
<thead>
<tr>
<th><strong>primary caregivers, recruited from outpatient pediatric clinics</strong></th>
<th><strong>clinical disturbance of attachment</strong> (defined as a combination of: (1) nonautonomous caregiver state of mind with respect to attachment, measured by the Adult Attachment Interview (AAI); (2) nonbalanced caregiver representation of the infant, measured by the Working Model of the Child Interview (WMCI); (3) problematic play interactions; and (4) problematic feeding interactions).</th>
<th><strong>attachment --- nonautonomous AAI and nonbalanced WMCI classifications, and less dyadic reciprocity during feeding. However, there were no group differences in play.</strong></th>
<th><strong>may be the caregiver’s response to the infant at times when the infant’s attachment system is activated (i.e., when the infant is emotionally distressed, physically hurt, or ill) that matters most in predicting whether the infant (with or without FTT) is at risk for a clinical disturbance of attachment.</strong></th>
</tr>
</thead>
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<tr>
<td><strong>Logan, D., Sieberg, C., Conroy, C., Smith, K., Odell, S., Sethna, N. (2014)</strong></td>
<td><strong>Participants (84% female) were a cohort of 274 youth (ages 10–18, mean age 14.6 years) with neuropathic or musculoskeletal pain and associated disability who completed measures at admission, discharge, and short term (1–3 month) follow-up.</strong></td>
<td><strong>Sleep behaviors play an important role in the experience of chronic pain in adolescence; less well known is the effect of improved sleep in the context of pain rehabilitation. This study examined changes in sleep habits and their association with pain and functioning following day-hospital interdisciplinary pediatric pain rehabilitation.</strong></td>
<td><strong>Qualitative</strong></td>
</tr>
<tr>
<td><strong>Logan, D., Sieberg, C., Conroy, C., Smith, K., Odell, S., Sethna, N. (2014)</strong></td>
<td><strong>Sleep behaviors play an important role in the experience of chronic pain in adolescence; less well known is the effect of improved sleep in the context of pain rehabilitation. This study examined changes in sleep habits and their association with pain and functioning following day-hospital interdisciplinary pediatric pain rehabilitation.</strong></td>
<td><strong>Results show that sleep habits improved over the course of intensive pain rehabilitation treatment, with continued improvements at follow up. Sleep habits at discharge correlated with concurrent measures of functional disability and mood symptoms, with healthier sleep habits being associated with less disability and fewer mood symptoms. Furthermore, greater sleep duration, less sleep onset delay, and fewer night wakings correlated with lower pain intensity ratings at discharge.</strong></td>
<td><strong>Controlling for change in pain with treatment, baseline sleep habits, age, and concurrent depressive symptoms, sleep habits at discharge predicted global functioning and school functioning measured at follow-up. There was modest support for changes in sleep habits over the course of treatment predicting pain reduction at follow up, with decreased night wakings significantly predicting reduced pain intensity at follow-up. Improvements in sleep habits may be one mechanism of efficacy for intensive pediatric pain rehabilitation.</strong></td>
</tr>
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