

Effects of a Poetry Intervention on Emotional Wellbeing in Hospitalized Pediatric Patients

Anna Delamerced, BA,^a Cia Panicker, MD,^b Kristina Monteiro, PhD,^c Erica Y. Chung, MD^b

ABSTRACT

BACKGROUND AND OBJECTIVES: The hospital is often a challenging and unfamiliar environment for families. Hospitalization can increase stress and anxiety among children and caregivers. In this study, we are the first to explore the possible therapeutic effects of poetry on hospitalized pediatric patients' emotional wellbeing.

PATIENTS AND METHODS: Patients aged 8 to 17 years old admitted to the inpatient pediatric ward and their parents or guardians were eligible for inclusion. With the validated Pediatric Quality of Life Present Functioning Visual Analogue Scales, 6 items were measured before and after the poetry intervention for each participant: fear, sadness, anger, worry, fatigue, and pain in the present moment. The intervention itself consisted of poetry-based reading and writing exercises. Participants and parents also completed an open-ended qualitative survey on their experience.

RESULTS: Data from 44 participants were analyzed. Using the Wilcoxon signed rank test, we showed that the poetry intervention had a statistically significant reduction in 5 of the 6 Pediatric Quality of Life Present Functioning Visual Analogue Scales symptom measures: fear ($P = .021$), sadness ($P = .004$), anger ($P = .039$), worry ($P = .041$), and fatigue ($P < .001$). Reduction in pain was not statistically significant ($P = .092$). Six coded themes emerged from qualitative analysis: the poetry intervention facilitated (1) happiness and (2) family involvement, was viewed as a (3) good distraction and (4) screenless activity, and cultivated (5) creativity and (6) self-reflection.

CONCLUSIONS: The poetry intervention led to statistically significant reductions in fear, sadness, anger, worry, and fatigue but not in pain. The study reveals promising results and serves as a starting point for future investigations on the therapeutic impact of poetry on hospitalized pediatric patients.



^cAssessment and Evaluation, ^aThe Warren Alpert Medical School of Brown University, Providence, Rhode Island; and ^bPediatrics, The Warren Alpert Medical School of Brown University and Rhode Island Hospital and Hasbro Children's Hospital, Providence, Rhode Island

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Address correspondence to Erica Chung, MD, Rhode Island Hospital/Hasbro Children's Hospital, 593 Eddy St, Multiphasic Building 223, Providence, RI 02903. E-mail: erica_chung@brown.edu

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Ms Delamerced conceptualized and designed the study, conducted analyses, drafted the initial transcript, and revised the manuscript; Dr Monteiro conducted analyses and reviewed results; Drs Panicker and Chung contributed to the conception and design of the study and reviewed and revised the manuscript; and all authors approved the final manuscript as submitted.

The hospital can be a daunting and fear-inducing environment for children. A child's illness or injury requiring hospitalization can pull them out of school, keep them away from family and friends, and disrupt their sense of normalcy. Being hospitalized also poses emotional challenges.¹ Pediatric patients may experience anxiety, stress, and a sense of helplessness from a multitude of factors. Such factors include a lack of control over their environment; an influx of various health care providers switching shifts or multiple teams of providers; unfamiliar sights, smells, and sounds; and discomfort from procedures, from intravenous line placement to more invasive procedures such as surgery.² Health care-induced distress can have profound implications for a child's life that may extend beyond the dates of their hospitalization, so it is important to recognize and address a patient's state of emotional wellbeing.³

Interventions targeting anxiety in pediatric patients have been studied. For example, hospital clowns have been shown to play a significant role in decreasing anxiety and stress among pediatric patients.⁴ In one study, interaction between therapeutic clowns and children hospitalized for respiratory conditions led to a statistically significant decrease in diastolic blood pressure and respiratory rate.⁵ Other well-studied interventions that target pediatric hospital anxiety include music therapy.⁶ Among hospitalized pediatric patients with bone marrow transplant, music therapy decreased the perception of isolation and negative mood and enhanced both caregiver and child's psychosocial wellbeing.⁷ In the NICU, music-based interventions led to a decrease in respiratory rate, improvement in infant's sleep, and decrease in maternal anxiety.⁸ Playing recordings of Bach music for hospitalized children also reduced anxiety.⁹ These are existing interventions that have been previously studied, but none have investigated the role of poetry in ameliorating anxiety in hospitalized pediatric patients.

Poetry is a novel and unfolding field of interest in the clinical world. In an adult study, patients who had strokes were given the opportunity to read poetry, which

improved cognitive function. This also led to cathartic experiences because many of the poems expressed lamentations, which is particularly poignant to patients who were navigating the sequelae of stroke.¹⁰ Other forms of writing have been investigated in the adult population. In one study, patients undergoing chemotherapy infusion were offered a reflective writing activity. On the basis of prompts of their choice, they wrote their thoughts, emotions, and experiences in a provided journal. A validated questionnaire was administered before and after the activity to measure symptom burden, and results found a statistically significant reduction in anxiety.¹¹

Although writing and narrative medicine have been well-reported in the literature, poetry is still a new area of exploration, not only within the adult population but also within the pediatric population. To the authors' knowledge to date, this is the first study in which the effects of poetry on hospitalized pediatric patients' wellbeing are investigated. We hypothesized a brief poetry intervention would enhance the emotional health of hospitalized children by reducing symptom burden such as sadness and anxiety.

METHODS

Subjects

Pediatric patients aged 8–17 years who were hospitalized at an academic children's hospital in the northeastern United States and their parents and/or guardians were recruited from October 2019 to March 2020. Potential participants were identified daily from the inpatient hospital census. Children were excluded from the study if they were being evaluated for suspected child maltreatment, were admitted to the psychiatric unit or critical care and/or ICU, were wards of the state, or had significant impairments that would preclude participation. The intervention was only available in English. Written consent from parents and guardians and verbal assent by children were obtained. This study was approved by the Lifespan Institutional Review Board.

Parent/participant dyads filled a form asking for their age and reason for hospitalization and completed a

questionnaire assessing symptom burden immediately before the poetry intervention. The questionnaire was the validated Pediatric Quality of Life Present Functioning Visual Analogue Scales (PedsQL VAS), a 6-item questionnaire that is used to assess anxiety, sadness, anger, worry, fatigue, and pain using 6 visual analogues.¹² Participants then completed the poetry program intervention, which is detailed below. The same PedsQL VAS questionnaire was administered immediately after the intervention. Results from before and after the intervention were compared with assess for symptom changes. Participants also completed a qualitative survey with 2 open-ended questions about their overall poetry intervention experience and on the state of their wellbeing. This was administered with the postquestionnaire, immediately after the intervention. Questions included: "How did writing poetry make you feel?" and "What did you like about it?" The same survey was given to parents and guardians to assess their perspectives of their child's wellbeing postactivity.

Data Analysis

For quantitative data, we used the scoring methodology that accompanies the PedsQL VAS questionnaire. This 6-item questionnaire is used to measure a patient's present functioning at that time on anxiety, sadness, anger, worry, fatigue, and pain. Scoring involves a 0- to 100-mm line for each item. The participant marks anywhere on the line how they perceive that item, that is, a higher feeling of anxiety would mean a mark on the higher end of the line. A higher score reflects a higher intensity of that item. The change in intensity for that item is compared within a single participant before and after the intervention. Statistical analysis was done by Wilcoxon signed rank test, a nonparametric paired difference test. Qualitative analysis was conducted by primarily 1 investigator (A.D.). The qualitative survey data were coded by using line-by-line coding, followed by inductive thematic coding and constant comparative analysis¹³ to develop themes gleaned from the surveys.

Intervention

The intervention itself consisted of portable "poetry-writing kits" created for this study

on the pediatric inpatient wards. The intervention was piloted ahead of time with 3 hospitalized pediatric patients to test the flow of the intervention and receive immediate feedback from participants. Each “poetry-writing kit” contained writing prompts, sheets of selected poems, activities, colorful construction paper, pens, and markers. Participants could choose to engage in either the reading component or writing component of the intervention, or both (see below). To standardize time, session length was ~20 to 30 minutes. Session facilitators who engaged with the participants were 2 of the investigators (A.D. and C.P.).

Reading Component

Individual poems that were preselected for content included *The Giving Tree* by Shel Silverstein, *The Rainbow* by Christina Rossetti, and *Hope is the Thing with Feathers* by Emily Dickinson. Participants had the freedom to choose which poem(s) they wanted to read. They could read it out loud or quietly to themselves, with their parents, or with the facilitator to guide them if they decided.

Writing Component

The intervention also included poetry-writing prompts aimed at cultivating creativity and reflection (see Supplemental Information). Examples of prompts are: “What do you think are your best strengths?”; “What is your favorite thing to do on Saturdays?”; and “Tell me a fun fact about you or a hidden talent you have.” Other writing exercises included rhyming and word-play activities, fill-in-the-blank poetry sheets, acrostic poems, and haikus.

RESULTS

Data from 44 participants were analyzed. The median age was 11. The top 3 most-common self-reported reasons for hospitalization in this sample were psychiatric (12 participants), surgical (11), and infectious (8). Other reasons included hematologic and oncologic (6), neurologic (3), pain-related (3), and endocrine (1) (Fig 1).

Dependent *t* tests comparing pre- and postintervention responses on the PedsQL VAS questionnaire showed statistically

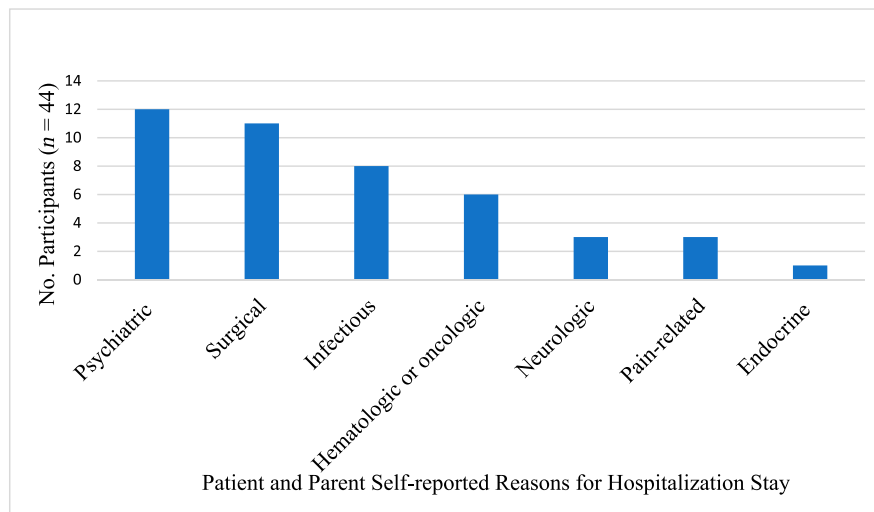


FIGURE 1 Number of participants under self-reported reasons for hospitalization.

significant reductions in 5 of the 6 symptom measures (Fig 2). A reduction was seen in fear ($t(43) = 2.39, P = .021$), sadness ($t(43) = 3.01, P = .004$), anger ($t(43) = 2.13, P = .039$), worry ($t(43) = 2.13, P = .041$), fatigue ($t(43) = 5.40, P < .001$). The most-significant decrease was observed in the measure of fatigue.

Reduction in pain was not statistically significant ($t(43) = 1.72, P = .092$). The wide SDs suggest large variability across all the measures (Table 1).

All 44 participants and their parents completed open-ended surveys at the end of the poetry intervention. Six coded themes

emerged from qualitative analysis. Brief descriptions and representative quotes are depicted in Table 2. The themes revealed that the poetry intervention facilitated (1) happiness and (2) family involvement, was viewed as a (3) good distraction and (4) screenless activity, and cultivated (5) creativity and (6) self-reflection.

DISCUSSION

The poetry intervention led to statistically significant reductions in symptom burden among pediatric patients in the inpatient setting, particularly in fear, sadness, anger, worry, and fatigue, with fatigue having the

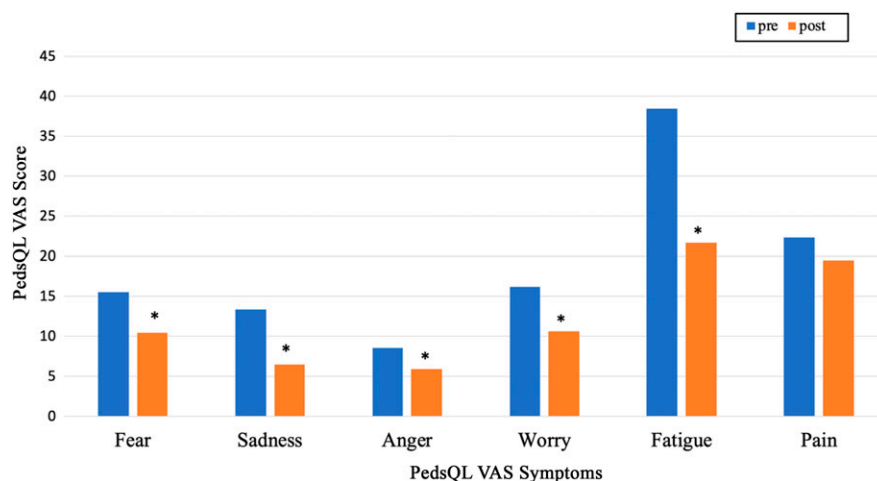


FIGURE 2 Graph of Symptoms pre- and postpoetry intervention. * $p < .05$.

TABLE 1 Changes in Symptom Scores Before and After Poetry Activity

Symptom	Prepoetry, Mean (SD)	Postpoetry, Mean (SD)	P
Fear	15.49 (27.72)	10.44 (23.59)	.021
Sadness	13.31 (22.03)	6.47 (14.13)	.004
Anger	8.51 (19.69)	5.92 (17.53)	.039
Worry	16.19 (28.66)	10.61 (23.48)	.041
Fatigue	38.42 (27.53)	21.68 (23.41)	<.001
Pain	22.27 (27.55)	19.43 (24.62)	.092

PedsQL VAS score range from 0 to 100; higher values indicate higher intensity of symptom.

study, researchers found highly pleasurable emotional effects of poetry by involving the neural reward system.¹⁷ Thus, this may additionally explain why there were significant reductions in symptom burden. These concepts are further discussed and elucidated below in the themes coded from the qualitative data.

There was no statistically significant reduction in pain, perhaps in part because of its multifaceted and subjective nature; because it can be difficult to measure, patients may have overestimated or underscored their pain scores or designated their pain at baseline 0. Our study differs from a previous study in which researchers did find decreased pain scores among adult patients with cancer who disclosed highly emotional experiences about their illness in narrative writing.¹⁸ Researchers in that study proposed that specifically writing about pain led to a reduction in pain. Not all of our study participants specifically wrote about their illness or pain in their poetry, which may explain in part why we did not observe a statistically significant reduction in this item.

Six themes emerged from qualitative analysis.

largest reduction. No statistically significant reduction was found in the outcome of pain.

Depending on the reason for hospitalization, children with illness may already feel fatigue and may tire easily from doing an activity. However, the data suggest participants actually reported increased energy levels after completing the poetry intervention. We consider other variables that may contribute to decreased perceptions of fatigue, such as the presence of both a parent and facilitator in the room to encourage and support the child as they do the poetry activity. Feelings of accomplishment may also contribute to the sense of decreased fatigue, in that these feelings can offer a boost of morale and be processed via the reward pathway in the brain.¹⁴

There was a significant reduction in the other symptoms as well. We hypothesize that the activity itself played a large role in distracting children from their present feelings of fear, sadness, anger, or worry. Family involvement perhaps reminded children that they are not alone in the hospital or navigating their illness, thus decreasing feelings of worry. Reductions in fear and worry are particularly consistent with previous interventions targeting anxiety in hospitalized pediatric patients, including magic therapy.¹⁵ Only a few researchers have investigated the physiologic effects of poetry on the human brain and body, and it is an area for further research. In one study, researchers found college-aged participants more relaxed after reading emotionally positive poems.¹⁶ In another

TABLE 2 List of Themes With Example Quotes

Themes	Brief Description	Example, Representative Quotes from Parent or Child
1. Happiness	Poetry evokes feelings of happiness in the child amid a challenging time such as illness	"It was a lot of fun and I felt very happy"; "gave me happiness"; "felt good"; "so much fun"; "you could see her face light up with happiness"
2. Family involvement	Reading and writing poetry cultivate a collaborative environment between parent and child that enhances their relationship in the hospital	"Engaging activity"; "did something together"; "fun to write poetry with another person"; "mom reminded me of my good traits and qualities"; "interactive"
3. Good distraction	Poetry activity acts as a distraction for children from both the hospital environment and their illness	"Helped get his mind off of things"; "it was a good distraction for my daughter"; "I was able to think of other things, not just my sickness"
4. Screenless activity	Reading and writing poetry offers a screenless activity, particularly in a screen-saturated hospital room with its television screens and online entertainment	"Something to do besides watching too much TV"; "didn't have to use the iPad to have fun"; "screenless activity for them to do"
5. Creativity	Poetry fosters creativity, compelling children to exercise their minds in imaginative ways	"Engages kids creatively"; "felt creative"; "keeps their creative juices going"; "keeps their thinking skills and imagination going"
6. Self-reflection	Poetry provides space for the child to reflect	"Space to express my emotions, feelings, thoughts"; "self-reflective"; "thought it was a good chance to express myself"; "helped me process through things"; "made me realize things I hadn't realized before"

1)Happiness

Almost all the participants wrote in the survey that they felt happy after the poetry activity. It was not a specific item measured on the PedsQL VAS questionnaire but is consistent with the statistically significant reduction seen with sadness. Participants often paired the words “happy” and “fun” together. One participant said, “It was a lot of fun and I felt very happy,” and another wrote that the activity “gave me happiness” and was a “fun thing to do.” They also used phrases such as “felt good” and “liked it a lot.” Parent feedback echoed these sentiments as well. “You can see her face light up with happiness,” said one parent, while another said, “The activity lifted her spirits.” The poetry activity was shown to be a pleasant experience that evoked feelings of happiness and joy.

2)Family Involvement

Another theme that was identified from the surveys was family involvement. Parents, and even any siblings in the hospital room, had the option to participate in the poetry activity if the child desired. They could read poems with them or write a poem together. The majority of children desired parental involvement in the activity, especially in writing the poem. Parents and children bounced ideas off one another. Specifically, the acrostic poem activity cultivated the most parental involvement. The activity asked participants to think of characteristics that described themselves, and each characteristic had to start with the letters that constituted the child’s name. For example, if the child’s name was Sam, the first adjective would need to start with the letter S, the second adjective would start with the letter A, and the last would start with the letter M. If the mother, father, or even sibling was in the room, they would chime in and contribute words they thought described the child, such as “super” for S. Both parents and children recognized the potential interactive aspects of poetry. This collaborative nature was a surprising, positive observation because reading and writing poetry are often thought of as solitary activities.

3)Good Distraction

Several parents perceived the poetry activity to be a good distraction from both

the hospital environment and the child’s illness. One mother reported that it “helped get his mind off of things” while staying at the hospital. Another parent said “it was a good distraction for my daughter” before surgery. Children also endorsed this, with one child saying “I was able to think of other things, not just my sickness.” Distraction has been shown to relieve anxiety in previous literature as well. Researchers in studies on music, for example, have identified it as a form of distraction for children undergoing medical procedures such as intravenous placement in the emergency department.¹⁹ Humor-based approaches through hospital clowns have also been shown to distract pediatric patients during medical procedures and in the preoperative period.²⁰ A poetry intervention adds to the body of literature on hospital-based activities that can serve as a therapeutic distraction for children in clinical settings.

4)Screenless Activity

This theme was coded from parental feedback on the poetry intervention. Several parents recognized that this poetry intervention was a “screenless activity.” One parent said it gave her child “something to do besides watching too much TV.” Another parent appreciated how his child “didn’t have to use the iPad to have fun.” The hospital environment is often saturated with screens from the in-room television to video games in the playroom. Online entertainment media is readily made available to hospitalized children. Researchers in one study found that screen media was used in 80.3% of observations of awake hospitalized children, and children directly attended to the screen in nearly 50% of observations.²¹ Screen overuse is associated with negative physical and mental health effects in children, such as interference with sleep, eating, and mood.²² Poetry offers a beneficial screenless activity that allows children to spend time away from television and iPads. This type of activity can break the cycle of staring at screens for long periods of time.

5)Creativity

A fifth theme identified was that poetry fosters creativity. Previous researchers have

shown the positive benefits of arts and crafts, and hospitalized children are provided various creative projects through the child life programs. Paint therapy has been shown to foster creativity among adult patients receiving chemotherapy infusions.¹¹ Similarly, arts therapy for psychiatric patients found reductions in mental health–related symptoms, hypothesizing that participating in creative activity has potential benefits for people experiencing mental health conditions.²² Poetry stimulates cognition and imagination.²³ Our qualitative findings are consistent with previous studies and suggest that poetry is another free-form mode for patients to express themselves and cultivate creativity. Confinement to a room and limited activities are among the factors that can stifle creativity in the hospital. Poetry can be an additional avenue for pediatric patients to exercise creativity even in a stark place such as the hospital.

6)Self-Reflection

A final theme coded from the surveys was that poetry fosters self-reflection. Poetic language opens a space for patients to tap into and access parts of their identity that would be difficult to articulate and grasp otherwise.²⁴ Adolescents who were hospitalized for psychiatric-related reasons likely benefited the most from the self-reflective aspect of poetry. Our study is in keeping with previous ones. For instance, researchers in one study found optimism scores increased and negative-affect scores decreased among adolescents after completing an expressive writing intervention but did not engage in poetry.²⁵ Similarly in our study, for participants who wrote poetry specifically in response to their illness or reason for hospitalization, the act of writing their thoughts and emotions likely helped facilitate reflection and insights. They were able to put their feelings, that which is more abstract, into words, which is more concrete. Narrative therapy has been shown as a way to invite patients to say, write, or artistically represent an interpretation of their illness.²⁵ In doing so, they can confront worries or fears and experience catharsis. The act of sharing poetry also opens a space for

dialogue. For one adolescent, sharing what she wrote with her mother facilitated a deeper understanding between one another, particularly when it came to her mental health condition. For others, they found new perspectives and new meanings to their illness when they took time to reflect and put to words their experiences.

Primary limitations included that this study took place in a single institution, limiting its generalizability. There was a lack of standardization in the intervention itself because participants could choose from a variety of poetry-related activities. Additionally, within the activities, it could have been beneficial to compare the effectiveness of the different parts of the intervention, such as reading versus writing poetry. A further possible limitation was that this study could only be conducted with patients who had parents present, to obtain consent. Patients without parents in the room could have benefited from the poetry intervention equally, more, or less. The interaction between parents and participants could have been a confounding variable affecting any of the measured emotions. Another concept to consider is clinical significance versus statistical significance. A reduction in an emotion that was already low-scoring (eg, anger) may not be equivalent to the child perceiving less anger (because he or she never felt severely angry initially). In that same vein, a reduction in a high scoring emotion such as pain may actually be felt and appreciated by the child, although it was not shown to be statistically significant.

Finally, with a larger sample size, we could have explored the impacts of the poetry intervention on different subgroups of diagnoses. For example, the baseline distress and the impact of the intervention may vary between a pediatric patient hospitalized for an acute surgical intervention or psychiatric illness, compared with one hospitalized for long-term oncology treatment. It is also possible our large sample of psychiatric patients skews the intervention benefits, because previous literature has shown creative writing to be beneficial within mental health psychotherapy.²⁶ Future aims include

increasing the sample size for further data analysis and observing the applicability at multiple institutions.

CONCLUSIONS

We present the first study in which the effects of a poetry intervention on the wellbeing of hospitalized pediatric patients are investigated. We hope our promising results could serve as a model to design, implement, and adopt similar poetry programs at multiple inpatient pediatric settings. For example, child life services could more frequently incorporate poetry programs at children's hospitals. Medical students, undergraduate students, or hospital volunteers could also be trained as facilitators of poetry activities. This is a growing area of research on the power of creative practices, and we advocate for the continued exploration of poetry-based interventions among the inpatient pediatric population.

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