



# VCU

Virginia Commonwealth University  
VCU Scholars Compass

---

Undergraduate Research Posters

Undergraduate Research Opportunities  
Program

---

2020

## Parent-Child Perception of Cancer-Specific Quality of Life and Relationship to Medication Adherence

Tiara Bolden

Evrosina Isaac

Follow this and additional works at: <https://scholarscompass.vcu.edu/uressposters>

© The Author(s)

---

### Downloaded from

Bolden, Tiara and Isaac, Evrosina, "Parent-Child Perception of Cancer-Specific Quality of Life and Relationship to Medication Adherence" (2020). *Undergraduate Research Posters*. Poster 373.  
<https://scholarscompass.vcu.edu/uressposters/373>

This Book is brought to you for free and open access by the Undergraduate Research Opportunities Program at VCU Scholars Compass. It has been accepted for inclusion in Undergraduate Research Posters by an authorized administrator of VCU Scholars Compass. For more information, please contact [libcompass@vcu.edu](mailto:libcompass@vcu.edu).

<sup>1,2</sup>Tiara Bolden, <sup>2,3,4</sup>Jennifer M. Rohan, Ph.D. & <sup>2,4</sup>Evrosina I. Isaac, BS  
<sup>1</sup>VCU Department of Psychology; <sup>2</sup>Children's Hospital of Richmond at VCU; <sup>3</sup>Massey Cancer Center, <sup>4</sup>VCU School of Medicine

## OBJECTIVES

- ✓ Medication adherence has a significant impact on health outcomes in pediatric cancer with adherence <95% indicating a significant increase in relapse risk. In recent years, the literature on medication adherence in pediatric oncology has increased. However, there is a lack of research on determining what specific factors may result in nonadherence.
- ✓ To our knowledge, there is limited literature on parent-child rater discrepancies in pediatric cancer studies.
- ✓ The current research was conducted to address the gaps in the literature regarding parent-child perceptions of cancer-specific quality of life and medical adherence.
- ✓ The objective of this study was to assess the relationship between quality of life and medication adherence in the pediatric oncology setting. We also aim to examine the discrepancies of parent and child perceptions in cancer-specific quality of life.
  - ✓ We hypothesize that there will be a significant relationship between medication adherence and quality of life, such that, higher QoL scores will be associated with better medication adherence
  - ✓ We hypothesize that parent and child reported QoL will be consistent across all domains; and, that there will be a three-group model of QoL indicating different levels of QoL over time (i.e., low QoL, moderate QoL, and optimal QoL).

## METHODS

- ✓ Longitudinal, multisite study in a pediatric cohort.
- ✓ **Behavioral measures** (e.g., electronic monitoring of 6MP) monitored drug taking behavior of children/adolescents during the maintenance phase of treatment (across 15 months).
- ✓ **Quality of Life** measured via assessment batteries, which included a Parent- and Child-Report of PedsQL Quality of Life Inventory (at baseline, 6 months, and 15 months)..

Baseline Demographic and Medical Characteristics	
Patient's age at baseline (years)	12.29 years ± 3.44
Type of Cancer Diagnosis	
ALL	133 (95.7)
LBL	6 (4.3)
Duration of Cancer Diagnosis (Years)	1.29 years ± 0.35
Child's Gender	
Male	94 (67.6)
Female	45 (32.4)
Child's Ethnicity/Race	
Non-Hispanic, Caucasian	75 (54.0)
Non-Hispanic, Other	17 (12.3)
Hispanic	49 (33.9)
Household Composition	
One caregiver household	45 (32.4)
Two caregiver household	94 (67.6)
TPMT Absolute Value	12.71 ± 3.61
TPMT Genotype	
Heterozygote	18 (14.4)
Wild type	107 (85.6)

## RESULTS

Table I. Correlation between PedsQL Child-report and Child-report subscales at baseline

Variables	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
1= Child Pain and Hurt	1.000															
2= Child Nausea	0.396**	1.000														
3= Child Procedural Anxiety	0.229**	0.234**	1.000													
4= Child Treatment Anxiety	0.263**	0.284**	0.399**	1.000												
5= Child Worry	0.185*	0.384**	0.212*	0.266**	1.000											
6= Child Cognitive Problems	0.382**	0.308**	0.451**	0.271**	0.352**	1.000										
7= Child Perceived Physical Appearance	0.342**	0.372**	0.334**	0.295**	0.402**	0.388**	1.000									
8= Child Communication	0.206*	0.320**	0.407**	0.292**	0.491**	0.402**	0.443**	1.000								
9= Parent Pain and Hurt	0.473**	0.213	0.038	0.025	0.069	0.069	0.093	-0.104	1.000							
10= Parent Nausea	0.317**	0.417**	-0.011	0.007	0.206	0.036	0.073	-0.101	0.317**	1.000						
11= Parent Procedural Anxiety	0.145	0.161	0.477**	0.193*	0.042	0.117	0.163	0.009	0.241**	0.282**	1.000					
12= Parent Treatment Anxiety	0.169*	0.190*	0.177**	0.365**	0.095	0.030	0.162	-0.041	0.219**	0.387**	0.627**	1.000				
13= Parent Worry	0.152	0.187	0.064	0.094	0.365**	0.109	0.123	0.037	0.229**	0.432**	0.279**	0.438**	1.000			
14= Parent Cognitive Problems	-0.048	0.038	0.091	-0.082	0.160	0.254**	0.088	0.047	0.167**	0.154	0.243**	0.216*	0.403**	1.000		
15= Parent Perceived Physical Appearance	0.063	0.191*	0.053	0.083	0.281**	0.042	0.372**	0.051	0.224**	0.423**	0.344**	0.458**	0.470**	0.317**	1.000	
16= Parent Communication	-0.013	0.067	-0.010	0.061	0.151	0.017	0.122	0.115	0.044	0.274**	0.265**	0.386**	0.396**	0.404**	0.533**	1.000

\* p < 0.05  
 \*\* p < 0.01

Table II. Correlation between PedsQL Parent-report and Child-report subscales at 15 Months

Variables	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
1= Child Pain and Hurt	1.000															
2= Nausea	0.461**	1.000														
3= Procedural Anxiety	0.041	0.172	1.000													
4= Treatment Anxiety	0.252**	0.361**	0.522**	1.000												
5= Worry	0.359**	0.416**	0.272**	0.449**	1.000											
6= Cognitive Problems	0.233*	0.473**	0.079	0.326**	0.349**	1.000										
7= Perceived Physical Appearance	0.158	0.345**	0.191*	0.357**	0.333**	0.297**	1.000									
8= Communication	0.254**	0.352**	0.303**	0.348**	0.232*	0.306**	0.441**	1.000								
9= Pain and Hurt	0.587**	0.348**	-0.039	0.032	0.176	0.106	0.032	0.254**	1.000							
10= Nausea	0.353**	0.577**	0.008	0.174	0.324**	0.266**	0.078	-0.025	0.564**	1.000						
11= Procedural Anxiety	0.033	0.068	0.438**	0.137	0.038	-0.044	-0.043	0.000	0.262**	0.267**	1.000					
12= Treatment Anxiety	0.197*	0.404**	0.083	0.136	0.232*	0.158	0.105	0.062	0.381**	0.628**	0.539**	1.000				
13= Worry	0.291**	0.348**	0.084	0.061	0.469**	0.155	0.040	-0.034	0.376**	0.494**	0.233*	0.542**	1.000			
14= Cognitive Problems	0.015	0.294**	0.149	0.132	0.338**	0.390**	0.171	0.089	0.119	0.278**	0.221*	0.354**	0.434**	1.000		
15= Perceived Physical Appearance	0.177	0.265**	0.194*	0.185*	0.250**	0.120	0.384**	0.186*	0.343**	0.398**	0.347	0.512**	0.510**	0.378**	1.000	
16= Communication	0.149	0.262**	0.209*	0.185*	0.197*	0.130	0.207*	0.291**	0.287**	0.390**	0.304**	0.460**	0.380**	0.479**	0.623**	1.000

\* p < 0.05  
 \*\* p < 0.01

Table III. Correlations between Child-report of PedsQL domains at 15 months and cumulative adherence rates from baseline to 15 months

Variable	1	2	3	4	5	6	7	8	9
1= Pain and Hurt	1.000								
2= Nausea	0.461**	1.000							
3= Procedural Anxiety	0.041	0.172	1.000						
4= Treatment Anxiety	0.252**	0.361**	0.522**	1.000					
5= Worry	0.359**	0.416**	0.272**	0.449**	1.000				
6= Cognitive Problems	0.233*	0.473**	0.079	0.326**	0.349**	1.000			
7= Perceived Physical Appearance	0.158	0.345**	0.191*	0.357**	0.333**	0.297**	1.000		
8= Communication	0.254**	0.352**	0.303**	0.348**	0.232*	0.306**	0.441**	1.000	
9= Cumulative Adherence Rates Across 15 months	0.024	0.150	-0.125	-0.013	0.086	0.021	0.021	-0.016	1.000

\* p < 0.05

\*\* p < 0.01

Child-Report of Quality of Life Domains and Total Quality of Life correlational range across 15 months

Correlations ranged from	to	across 15 months.
Pain and Hurt	.543**	.576**
Nausea	.624**	.698**
Procedural Anxiety	.529**	.653**
Treatment Anxiety	.583**	.712**
Worry	.631**	.745**
Cognitive Problem	.580**	.683**
Perceived Physical Appearance	.619**	.706**
Communication	.638**	.688**

\* p < 0.05

\*\* p < 0.01

Child Reporter PedsQL Group-Based Trajectories

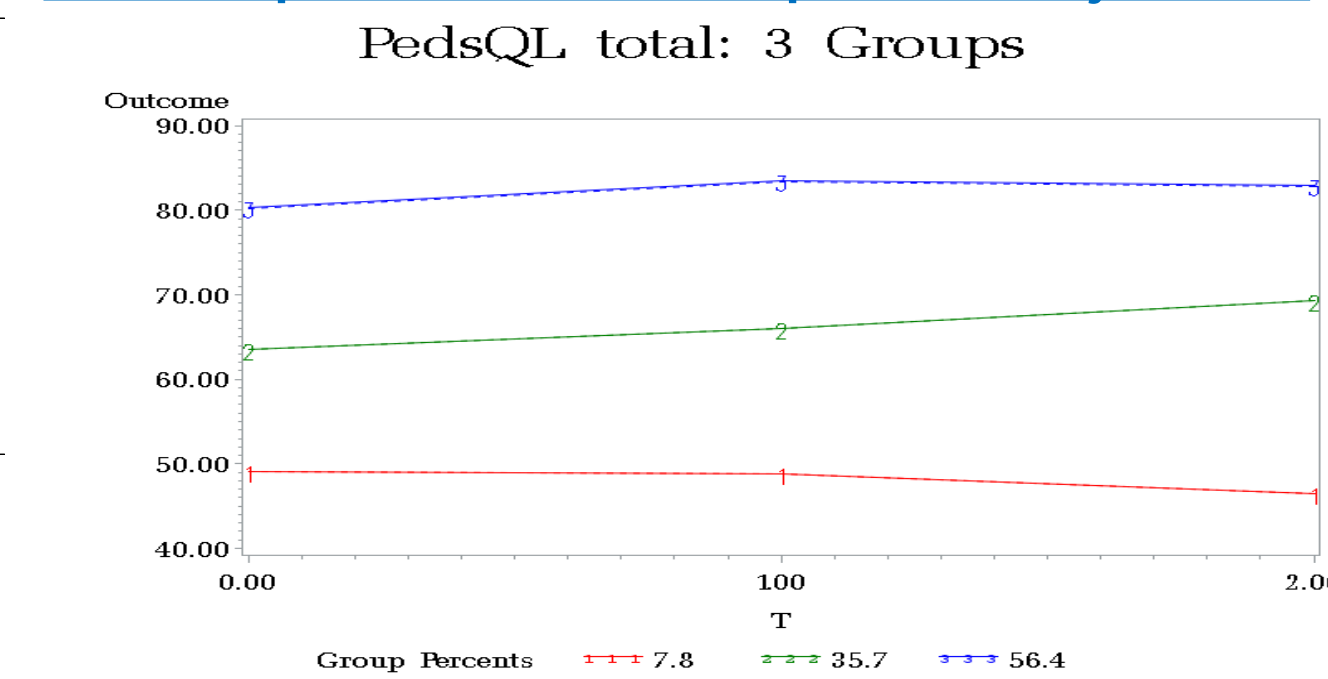


Figure 1.  
 ✓ The 3-group model has best fit.  
 ✓ Patients in group 1 reported the lowest QoL across 15 months with a baseline score of 49.1%. QoL increased at a rate of 0.67/month.  
 ✓ Patients in group 2 reported moderate QoL across 15 months with a baseline score of 63.5% with increases in QoL over time (rate of change = 2.07%/month)  
 ✓ Patients in group 3 reported the highest QoL across 15 months with a baseline score of 80.3% and increases in QoL of 5.1%/month across 15 months.

## CONCLUSIONS

- ✓ Parent-Child perceptions on **Communication** differed significantly at the baseline (p<0.05). Parent-Child perceptions differed significantly on **Treatment Anxiety** at 15 months (p<0.05). All other Parent and Child assessments of the PedsQL were strongly correlated (p<0.01).
- ✓ Quality of Life was correlated to Medication Adherence suggesting that Quality of Life could be factor of risk for relapse and adverse health outcomes (p<0.05).
- ✓ The group-based trajectory analysis revealed 3 quality of life groups (across 15 months). Patients in group 1 reported the lowest QoL with a baseline score of 49.1% increased at a rate of 0.67% per month. Group 2 reported moderate QoL with increases in QoL over time increased at a rate of 2.07% per month. Group 3 reported the highest QoL with a baseline score of 80.3% and increases in QoL of 5.1% per month.
- ✓ These preliminary findings suggested the importance of examining both patient and parent-reported cancer specific quality of life as parents and patients may not always report congruent perceptions of quality of life during cancer treatment.
- ✓ Future interventions should explore strategies for improving quality of life and medication adherence in pediatric cancer.

## CLINICAL IMPLICATIONS

- ✓ This study provides supporting evidence regarding the profound need for multidisciplinary clinical care initiatives in pediatric oncology care across all phases of treatment.
- ✓ Our findings indicated the importance of a tailored preventative and therapeutic approach for working with patients and families across the continuum of care and during survivorship.

## ACKNOWLEDGEMENTS

- ✓ Patients and families. Research assistants.
- ✓ This work was supported by the National Cancer Institute at the National Institutes of Health (grant numbers 1F31CA168307 to JMR, 1R01CA119162 to DD), the National Center for Research Resources (UL1RR024134 to MA), and the National Center for Advancing Translational Sciences (UL1TR000003 to MA).