Original Research

IJNHS

Characteristics of Quality of Life of Children with Cancer in RSAB Harapan Kita Jakarta

Widia Sari[1], Mira Asmirajanti[2], Rian Adi Pamungkas[3], Fhasa Lifiansah Azzah[4], Anita Sukarno[5]

Department of Nursing, Universitas Esa Unggul, Jakarta

Article info

Article history:
Received: October 01st, 2022
Revised: October 15th, 2022
Accepted: October 23th, 2022

Corespondent author:
Name: Widia Sari
Address: Nursing Departement, Esa Unggul University
E-mail: widia.sari@esaunggul.ac.id

International Journal of Nursing and Health Services (IJNHS)
Volume 5, Issue 5, October 20th, 2022
DOI: 10.35654/ijnhs.v5i5.653
E-ISSN: 2654-6310

Abstract

Background: Cancer is a common health burden among children. Uncontrolled metastases of cancer cells produce various clinical manifestations in children that impact their quality of life. **Objective**: This study aims to determine the description of the quality of life which includes physical function, emotional function, social function, and school function in children with cancer undergoing treatment at RSAB Harapan Kita Jakarta. **Method**: This cohort study was conducted among 28 inpatient cancer children in RSAB Harapan Kita Jakarta. PedsQol 4.0 was used to assess the quality of life level among children in 7 days of follow-up during their hospital stay. We assessed the mean differences in 7 days follow-up using Repeated Measure ANOVA. **Result**: This study found that the highest score of quality of life domain was on social function on the 5 day (mean= 19.57, SD=1.069) and the lowest score was on school function (mean=13.57, SD=2.911). There were no significant differences in scores of quality of life domains including physical (*p-value* = 0.828) and emotional function (*p-value* = 0.081), whereas, only social (*p-value*= 0.002) and school function (*p-value*= 0.008) was significantly changed in day 7 follow-up. **Conclusion**: Nursing intervention improve quality of life among children with cancer was essential that may support children's growth and development according their age. **Recommendation**: Nurse need to consider the component of quality of life in providing the management among children with cancer.

Keywords: quality of life, children, cancer

INTRODUCTION

Cancer was diagnosed commonly in children. The incidence of cancer is caused by the growth and spread of abnormal and uncontrolled cells. This increases the incidence of cancer in children. It was estimated that 10,470 children in the United States under the age of 15 will be diagnosed with cancer by 2022 and 1,050 were expected to die from cancer (1). In Indonesia, it was estimated that 14,000 children with cancer each year and 650 of these cancers originate from Jakarta (1).

The types of cancer that generally occur in children, namely leukemia, brain tumor, Wilms tumor, rhabdomyosarcoma, and osteosarcoma. One type of cancer that was often found in children was leukemia (2). Various types of cancer in children, of course, will have different impacts and clinical manifestations in each child, either as a result of treatment or symptoms of cancer and its complications. Clinical manifestations often appear including anemia, leukopenia, thrombocytopenia, weight loss, fever, oral mucositis, and other problems in certain organs.

The impact and clinical manifestations that appear will affect the quality of life in children. Quality of life is an individual's perception of their position with life in the context of the culture and value system in which they live and in relation to their goals, expectations, standards and concerns. Quality of life in children includes several aspects, including physical, emotional, social, psychological, school, and cognitive and spiritual aspects (3). These various aspects are interrelated and affect the lives of children and their families (4).

Research conducted by Nurhidayah et al (2016), found that children with cancer who underwent treatment in the pediatric care room, mostly had a poor quality of life, as many as 32 people (53.3%) and 28 children had a good quality of life. (46.7%). According to this report, it was illustrated that most children have a poor quality of life (5). In this study, it was also found that the school function aspect had a low mean value of 40.08 ± 24.36 while the social function had a high value of 68.67 ± 23.83. The low school aspect is one of the continued impacts of changes in physical, emotional and social functions. In addition, cancer treatment also takes a long time.

The negative consequences of the treatment undertaken by the children will also affect the children's psychological, social and cognitive aspects. Research conducted by Alabbas, et al (2021) showed that the mean of HRQOL score in children was 72.3, which means that it was almost the same as research in general in the world. The lowest score was anxiety on procedures (60.14%), perception of physical appearance (67.37%), anxiety due to treatment (67.58%), and the highest score was on communication (80.21%), nausea (78.32 %) and cognitive impairment (78.32%) (6).

Therefore, it is important for nurses to understand the quality of life in children with cancer. It helps determine appropriate nursing interventions and optimizes child development with current conditions through the philosophy of child nursing, namely family-centered and traumatic care. Currently, research related to the quality of life in children has often been carried out both in the world and in Indonesia. However, the cohort study related to this issue is limited. By taking measurements for 7 consecutive days, it can describe changes in the quality of life in children with cancer on a daily basis from 4 physical aspects, namely physical function, emotional function, social function, and school function.

OBJECTIVE

This study aims to determine the description of the quality of life which includes physical function, emotional function, social function, and school function in children with cancer undergoing treatment at RSAB Harapan Kita Jakarta.

METHOD

Design

This research is a quantitative descriptive study with a cohort perspective research design. This research was conducted in RSAB Harapan Kita Jakarta, which is the national pediatric referral hospital in Indonesia.

Sample, sample size & sampling technique

Respondents in this study were children with cancer aged 5 to 18 years who underwent treatment at RSAB Harapan Kita both in inpatient and outpatient rooms. The number of samples in this study was 28 children with

cancer aged 5 to 18 years who underwent treatment at RSAB Harapan Kita from June-August 2022.

Instrument for data collection

This study used the PedsQL 4.0 which was a reliable and valid questionnaire (Cronbach α = 0.70 to 0.90) to assess the quality of life scores among children with cancer (Varni, J., Burwinkle, T., Seid, 2005). The PedsQL questionnaire was also tested for validity in Bahasa (Indonesian) using Content Validity by 3 experts in research and pediatric nursing (Content validity mean score = 0.79).

Data collection process

This study was conducted for 7 consecutive days to assess the quality of life of children. On day 1, a face-to-face assessment was conducted by the researcher to assess the quality of life after children receiving chemotherapy. If the children were discharged, the assessment were carried out by WhatsApp or video call with parents. Quality of life scores were assessed during 7 days. All participants' parents provided informed consent before completing the study. All data were secured and only the researcher can access the data.

Data analysis

This study used descriptive statistics including frequency and percentage to describe of each quality of life aspect (physical, emotional, social, and school function) from day 1, day 2, and day 3 to day 7. Repeated Measured Anova assessed the mean difference of each aspect in 7 days follow-up.

Ethical consideration

This study obtained ethical consideration from RSAB Harapan Kita (IRB/24/08/ETIK/2022) and Universitas Esa Unggul (09222-08.047/DPKE-KEP/FINALEA/UEU/VIII/2022)

RESULTS

The results of this study describe demographic data consisting of the child's age, gender, type of cancer, duration of treatment, comorbidities, relapse period, and data on the quality of life of children consisting of physical, emotional, social, and emotional function on the first day until day 7.

Table 1 shows that the majority of respondents were preschool (57.1%), male (64.3%), diagnosed with leukemia (89.3%), underwent 1-2 years of treatment (64.3%), had no comorbidities (89.3%), and never experienced a recurrence of cancer (89.3%).

Table 1. The Characteristics of patients' demographic data

No	Variable	N	%
1	Age (years)		
	a. 5-6 (preschool)	16	5.1
	b. 6-12 (school)	5	17.9
	c. 12-18 (adolescent)	7	25
2	Gender		
	a. Male	18	64.3
	b. Female	10	35.7
3	Cancer types		
	a. Leukemia	25	89.3
	b. Wilms tumor	2	7.1
	c. Others (Germ cell)	1	3.6
4	Treatment duration (years)		
	a. <1	9	32.1
	b. 1-2	18	64.3
	c. ≥ 3	1	3.6
5	Comorbidity		
	a. Yes	3	10.7
	b. No	25	89.3
6	Recurrence		
	a. Yes	3	10.7
	b. No	25	89.3

Table 2 depicts that the highest mean was on social function (mean= 19; SD= 1.026), and the lowest mean was on school function (mean= 15, SD=3.163).

Table 2. The Characteristics of Children's Quality of Life in Day 1

Quality of Life Aspects	Mean	Median	SD
Physical function	17.79	19.00	5.453
Emotional function	18.07	19.50	2.493
Social function	19	20.00	1.026

School function	15.32	16.00	3.163

Table 3 illustrates that the highest mean was on social function (mean= 17.82, SD= 2.74), and the lowest mean was on school function (mean= 15.07, SD=3.27).

Table 3. The Characteristics of Children's Quality of Life in Day 2

Quality of Life Aspects	Mean	Median	Std
Physical function	17.21	17.50	5.567
Emotional function	17.71	19.00	2.813
Social function	17.82	19.50	2.749
School function	15.07	16.00	3.276

Table 4. The Characteristics of Children's Quality of Life in Day 3

Quality of Life Aspects	Mean	Median	SD
Physical function	17.11	17.00	5.731
Emotional function	17.54	19.50	3.605
Social function	18.54	20.00	2.365
School function	14.43	15.00	3.785

According to Table 4, the highest mean was on social function (mean= 18.54; SD= 2.365), while the lowest score was on school function (mean=14.43; SD= 3.785).

Table 5. The Characteristics of Children's Quality of Life in Day 4

Quality of Life Aspects	Mean	Median	SD
Physical function	17.11	18.00	5.731
Emotional function	17.54	20.00	3.605
Social function	18.54	20.00	2.365
School function	14.43	15.50	3.785

Table 5 shows that the highest mean was on social function (mean= 18.54, SD= 2.36), and the lowest mean was on school function (mean= 14.43, SD=3.78).

Table 6. The Characteristics of Children's Quality of Life in Day 5

Quality of Life Aspects	Mean	Median	SD
Physical function	17.86	18.56	4.42
Emotional function	18.82	20.00	2.262
Social function	19.57	20.00	1.069
School function	13.57	13.50	2.911

Table 6 reports that the highest mean was on social function (mean= 19.57; SD= 1.06), and the lowest mean was on school function (mean= 13.57, SD=2.91).

Table 7. The Characteristics of Children's Quality of Life in Day 6

Quality of Life Aspects	Mean	Median	SD
Physical function	17.50	18.00	3.554
Emotional function	18.32	19.00	1.874
Social function	19.29	20.00	1.630
School function	14.89	15.00	3.155

Table 7 shows that highest mean was on social function (mean= 19.29, SD= 1.63), and the lowest mean was on school function (mean= 14.89, SD=3.15).

Table 8. The Characteristics of Children's Quality of Life in Day 7

Quality of Life Aspects	Mean	Median	SD
Physical function	17.18	18.00	4.800
Emotional function	18.82	20.00	1.894
Social function	18.89	20.00	1.853
School function	16.04	17.00	2.728

Berdasarkan tabel 8 highest mean was on social function (mean= 18.89; SD= 1.85), and the lowest mean was on school function (mean= 16.04; SD=2.72).

Table 9. The mean differences in quality of life aspects among Children with Cancer from Day 1 to Day 7

Quality of Life Aspects	p-value
Physical function	0.828
Emotional function	0.081
Social function	0.002
School function	0.008

Table 9 illustrates that there were significantly difference of mean score for each aspect including emotional function (p-value = 0.081), social function (p-value= 0.002), and school function (p-value= 0.002) during 7 days follow-up. However, only the physical function mean was not changed (p-value= 0.828).

DISCUSSION

Cancer is one of the most common chronic diseases in children. Chronic diseases in children may affect their growth and development. Cancer may directly affect their quality of life. Children's quality of life can be defined as a multidimensional concept consisting of symptom management, physical, psychological, physical, psychological, social, and spiritual. These conditions may influence physical, psychological, social, and spiritual conditions among children (2,7).

Promoting quality of life in cancer children is one of the challenges for pediatric nurses due to various child's experiences during treatment that produce many negative impacts, both physically, emotionally, psychologically, socially, school, and even spiritually on children and their families (3,8).

According to the demographic data, the majority of respondents were female. Theoretically, gender was not correlated with the quality of life of children with chronic diseases. Thavor's research (2010) reported that gender did not affect the quality of life of children with chronic diseases. Based on age, the majority of children are 5-6 years old, whereas children are at preschool age. In general, the incidence of cancer in children is most common at school and preschool age or often occurs in children under 15 years old (1). Based on the type of cancer, the majority of cancer types experienced by children in this study were leukemia. Leukemia is one type of cancer that is often found in children (2).

The majority of children undergo treatment for 1-2 years, in this case, it will certainly play a role in the quality of life of children. In general, it will reduce the quality of life in children, especially in the induction and consolidation phase as the effect of chemotherapy and other treatments in children. Research conducted by Perwitasari (2009) found that the length of treatment and chemotherapy may reduce the quality of life of children with cancer. Decreased organ function and autonomy, decreased psychological status and impaired emotional function, especially 6 weeks after diagnosis, are observed in children with leukemia. After one year, children with tumors complained of more physical symptoms than other children (9). The intensity of treatment and medical complications experienced by children will certainly affect their quality of life of children.

In this study, the average child undergoing chemotherapy treatment was > 1 year with an average score of good physical function during 7 days of follow-up. It could be influenced by the adaptation process experienced by children during treatment. The results of the repeated ANOVA test showed that there was no difference in the mean score of physical function of children with cancer after a 7 day follow-up.

In addition, the length of the treatment process may also certainly impact the children's and families' psychology. Klassen's research (2011) observed that parents of children with cancer may experience anxiety, disturbed sleep, and severe stress to depression which will affect their daily activities.

Comorbidities experienced by children may also contribute to influencing the quality of life, but in this study, the majority of children did not experience comorbidities. The majority of children did not experience a recurrence. This finding shows that parents or families are very aware of their children's health and comply with chemotherapy and health protocols.

According to this study, from 1 to 7-day follow-up, the school function had the lowest mean on day 5 (Mean=13.57, SD=2.911). This was supported by other studies which showed that school functioning is a low aspect of quality of life in children with cancer (5,7). Cancer treatment undertaken by children greatly affects the function of schools because children and families were focused to follow a long treatment process requiring rehospitalization. In terms of school function, children with cancer cannot go to school during the illness period and after treatment children also experienced various physical health problems such as scars, decreased sensitivity, hearing, alopecia, or cognitive status changes (10). In addition, it was also found that there was a difference in the mean school functioning of the children after 7 days of follow-up ($p<0.05$).

The social function aspect had the highest mean value, which was (mean=19.57, SD=1.069) for 7 days of follow-up. This shows that during treatment children with cancer can still carry out their social functions by interacting with people around them such as parents, family, health workers and also other children or peer groups who are undergoing treatment at the hospital, especially for children who are sick. had > 1 year of chemotherapy and without complications. This result is in line with previous research which showed that children's social function was not disturbed and had the highest mean value (7). The child's ability to adapt to current conditions is of course also influenced by the length of treatment the child undergoes.

Improving the quality of life in children with cancer is one of the challenges for pediatric nurses. Cancer diagnosis and treatment take a long time. Therefore, program planning and implementation are needed to support children in overcoming their lives including continuing their school, socializing and playing with peers, and managing emotions.

This study uses a cohort perspective, but the follow-up is only done within 7 days so it has not provided too significant changes to the children's quality of life. In general, follow-up regarding children's quality of life is 6 months or > 1 year after undergoing treatment.

Acknowledgement

We thank to Rumah Sakit Anak dan Bunda Harapan Kita Jakarta and all participants who willingness to participate in this study.

REFERENCES

1. American Cancer Society, Society. Key Statistics for Childhood Cancers. 2022;1–2.
2. Hockenberry, M.J. & Wilson D. Wong's essentials of pediatric nursing. Wong's Essentials of Pediatric Nursing. 2009.
3. Rosenberg AR, Orellana L, Ullrich C, Kang T, Geyer JR, Feudtner C, et al. Quality of Life in Children With Advanced Cancer: A Report From the PediQUEST Study. J Pain Symptom Manage [Internet]. 2016;52(2):243–53. Available from: http://dx.doi.org/10.1016/j.jpainsymman.2016.04.002
4. Karayağmurlu A, Coşkun M, Pekpak E, Akbayram TH, Karayağmurlu E, Öğütlü H, et al. The assessment of quality of life, depression and anxiety in siblings of children with cancer: A case-control study. Turk Onkol Derg. 2021;36(1):17–25.
5. Nurhidayah I, Hendrawati S, S. Mediani H, Adistie F. Kualitas Hidup pada Anak dengan Kanker. J Keperawatan Padjadjaran. 2017;v4(n1):45–59.
6. Alabbas F, Elyamany G, Alkhayat N, AlShahrani M, Ibrahim W, Elborai Y, et al. Assessment of Health-related Quality of Life in Saudi Children with Cancer. Heal Serv Insights. 2021;14:117863292110293.
7. Arslan FT, Basbakkal Z, Kantar M. Quality of Life and Chemotherapy-related Symptoms of Turkish Cancer Children Undergoing Chemotherapy. Asian Pacific J Cancer Prev. 2013;14(3):1761–8.
8. Vlachioti E, Matziou V, Perdikaris P, Mitsiou M, Stylianou C, Tsoumakas K, et al. Assessment of quality of life of children and adolescents with cancer during their treatment. Jpn J Clin Oncol. 2016;46(5):453–61.
9. Landolt MA, Vollrath M, Niggli FK,

Gnehm HE, Sennhauser FH. Health-related quality of life in children with newly diagnosed cancer: A one year follow-up study. Health Qual Life Outcomes. 2006;4(May 2014).

10. Dieluweit U at al. Educational and Vocational Achievement Among Long-Term Survivors of Adolescent Cancer in Germany. Pediatr Blood Cancer. 2013;(February):1388–9.

11. Yayasan Onkologi Anak Indonesia. (2022). Diakses pada tanggal 01 Agustus 2022 melalui https://www.yoaifoundation.org/kanker-anak.php#fakta-angka