

## Relationship Duration Treatment Between Anxiety In A Child With Cancer During Chemotherapy At Regional General Hospital. Dr. Moewardi Of Surakarta

<sup>1\*</sup>Totok Wahyudi, <sup>2</sup>Endrat Kartiko Utomo, <sup>3</sup>Lin Marhamah, <sup>4</sup>Annisa Yuli Kartikasari

### Affiliation

<sup>1-2-4</sup> Universitas Duta Bangsa Surakarta, Indonesia  
<sup>3</sup>Pediatric Departmen Dr. Moewardi Hospital, Indonesia

Article Info	Abstract
<b>Article History:</b> Received:2024-06-20 Revised:2024-06-25 Accepted:2024-06-29  <b>Keywords:</b> Anxiety in child, Cancer of Child, Chemotherapy; Duratuion of Treatment  <b>Corresponding Author:</b> Totok Wahyudi: Universitas Duta Bangsa Surakarta <b>Email:</b> <a href="mailto:Totok_wahyudi@udb.ac.id">Totok_wahyudi@udb.ac.id</a>	<b>Background:</b> Cancer is the second-leading cause of death (after accidents) in children between the ages of 5 and 14 years old. Cancer can cause psychosocial anxiety problems that can lead to psychological problems that affect adulthood. <b>Purpose:</b> The aim of this study is to find out the long-standing relationship between the treatment of anxiety and cancer in a child during chemotherapy <b>Methods:</b> The aim of this study is to find out the long-standing relationship between the treatment of anxiety and cancer in a child during chemotherapy . <b>Results:</b> The results of the statistical tests showed that there was no long-term meaningful relationship between treatment and anxiety ( $p = 0.595$ ). <b>Conclusion:</b> The results of this study can be used as a reference to understand the factors associated with anxiety in children.

### Background

Cancer is the leading cause of death in childhood. (Edward, 2015). Cancer is the second cause of death (after accidents) in children aged 5 and 14 years old. The death toll from cancer is quite high, so far it's 1,960. The death rate is quite worrying and occurs in children up to 19 years of age. (Ward, et al., 2014).

The diagnosis of cancer creates many problems for the affected families, including major changes in lifestyle, roles, and relationships. (Scott, 2010). Diagnosis and treatment of cancer in children is an important health issue and involves many experiences that children experience causing stress and anxiety for children. In giving action done by the health force there will be some response that will arise between them is an emergency (Altay, et al., 2017).

Anxiety is a signal that warns of impending danger and allows a person to take action to overcome the threat (Kaplan, Sadock & Grebb, 2010). Anxiety is a normal condition that occurs in children, anxiety arises when children feel that there is something that makes them afraid which will later cause psychological problems that have an impact in adulthood (Shoaakazemi, et al., 2012).

A study conducted by Alicia et al., (2016) explains that anxiety in children with leukemia will occur in three months after therapy with a percentage of 24%.. High anxieties will occur a month after diagnosis than pre-therapy.

From the explanation above, the researchers were interested in looking at the emergency cases in cancer children during chemotherapy with the long-term treatment that children with cancer during chemotherapy.

## Method

This research is an analytical observational study with a cross-sectional quantitative approach. In this study, the sampling method used a non-random technique with a consecutive sampling method.

The location of this research was carried out at the Regional General Hospital Dr. Moewardi Surakarta, the samples in this study were children with cancer who were during chemotherapy. The instrument used in this study used an anxiety instrument that had been developed by previous researcher Aidar (2011) where the previous researcher adapted the Hamilton Scale For Anxiety (HRS-A) instrument. Data analysis in this study used Spearman.

## Results

Based on the descriptive description, it can be seen that 30 children with cancer during chemotherapy were divided into 8 (26.6%) children with pre-school age, 15 (50%) children with school age, teenagers amounted to 7(23.3%). 13 (43.3%) children were male, and 17 (56.7%) were female, and more than half of the children experienced mild anxiety, 17 (56.7%), moderate 13 (43.3%). As for the data of children with the type of cancer diagnosis data in this study, there are 6 (20%) children with diagnosis of osteosarcoma, children diagnosed with Acute Lymphoblastic Leukemia 7 (23.3%), children diagnoses with lymphoblastic leukemia 4 (13.3%) diagnoses of Tumor 7 (23,3%), children with a diagnosis of neproblastoma 2 (6.6%) and children with a diagnosis Rhabdomysarkoma, AML, Retino Blastina, Nephrotic Syndrome 1 (3.3% respectively). All children with cancer have been treated with chemotherapy.

Based on the results of the analysis test, it can be seen that the data is not normally distributed, so it was continued with the Spearman test with the results that there was no significant relationship between length of treatment and anxiety in cancer children during chemotherapy with a value of  $0.595 > 0.05$ .

**Table 1.** characteristics of respondents and description of variables

No	Variable	f	%
1.	Age		
	● Pre-school	8	26.6
	● School	15	50
	● Teenagers	7	23.3
2.	Gender		
	● Male	13	43.3
	● Female	17	56.7
3.	Anxiety		
	● Mild anxiety	17	56.7
	● moderate	13	43.3

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4. Type of Cancer		
• osteosarcoma	6	20
• Acute Lymphoblastic Leukemia	7	23.3
• Tumor	7	23.3
• Lymphoblastic Leukemia	4	13.3
• Rhabdomyosarcoma	1	3.3
• Nephroblastoma	2	6.6
• AML	1	3.3
• Nephrotic Cyndrome	1	3.3
• Retino Blastina	1	3.3

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## Discussion

The research results showed that half of the 30 respondents were school age children with an age range of 6-13 years. This result is in accordance with research from Nurhidayah (2016) that children with cancer are found in the age range of 5 to 18 years. The results of the study found that more than half, namely 17 children, were girls. Several previous studies have proven that there is no relationship between the incidence of cancer in children and gender (Baumester, Aktar, Ciufolni, Pariamte, & Mondeli, 2016; Pei et al, 2016).

There were 7 (23.3%) children with a diagnosis of Acute Lymphoblastic Leukemia, this is in line with research from Ward, et., al (2014) which states that Leukemia is the majority of cancer diagnoses in children, the American Cancer Society (2015) stated that Leukemia contributes 30% of the prevalence of cancer in children.

The research results related to anxiety, more than half of 17 (56.7%) children experienced mild anxiety, Fitriani (2017) explained that most children diagnosed with cancer with chemotherapy treatment had anxiety. The feelings of anxiety experienced by children before during chemotherapy are classified as situational anxiety, namely a source of anxiety that is associated with certain activities or events. This anxiety usually arises due to concerns about the chemotherapy procedure that will be undertaken and the side effects that can occur (Limbers & Larson, 2016). These effects are pain, sadness, fatigue, nausea and vomiting, loss of hair, diarrhea, constipation, sleep disturbances, fear of worsening conditions and others (Abdelaziz & Mona, 2017; Iyer, Balsamo, Bracken & Kadan-Lottick, 2015) .

The results of analysis tests to determine the relationship between length of treatment and anxiety showed that there was no significant relationship between treatment experience or length of treatment and anxiety in cancer children during chemotherapy with a value of  $0.595 > 0.05$ . This is of course related to adaptive coping mechanisms regarding the treatment experience (Momani, et., al, 2016).

Things that can support reducing the occurrence of anxiety in cancer children during chemotherapy include family support, family support is one factor that can reduce the occurrence of anxiety in children. In line with this, research conducted by Wahyudi (2020) explains that the better the family support provided, the lower the child's anxiety level. In this study, children were always accompanied by their parents while during chemotherapy. During treatment at the hospital, the family is an important element for the child. The closest family is the key so that children can easily receive nursing care.

Another factor that can reduce the level of anxiety in children with cancer during chemotherapy is the parents' coping strategies. Research from Wahyudi (2020) explains that this explains that the better the person's coping strategies in dealing with stressors, the lower the level of anxiety experienced by the child.

## Conclusion

The results of the study explained that 30 cancer children underwent chemotherapy, divided into 8 (26.6%) pre-school age children, 15 (50%) school age children, and 15 (50%) pre-school age children. amounted to 7(23.3%). 13 (43.3%) children were male, and 17 (56.7%) were female, and more than half of the children experienced mild anxiety, 17 (56.7%), moderate 13 (43.3%). Meanwhile, for data on children with the type of cancer diagnosis data in this study, there were 6 (20%) children with a diagnosis of osteosarcoma, 7 (23.3%) children with a diagnosis of Acute Lymphoblastic Leukemia, 3 children with a diagnosis of lymphoblastic leukemia, Corneal Tumor each ( 10%), and children diagnosed with Nephroblastoma, Meningeal Leukemia, Mediastinal Tumor, Rhabdomyosarcoma, Nephroblastoma, AML, Retino Blastoma, Nephrotic Syndrome each 1 (3.3%). All children with cancer have experience of treatment in the form of chemotherapy.

The results of the analysis showed that there was no significant relationship between the length of treatment and anxiety in children with cancer during chemotherapy with a P value >0.05. n.

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## References

- Abdelaziz, M. T., & Mona, M. (2017). The relationship between PTSD, Anxiety and Depression in Palestinian children with cancer and mental health of mothers. *J Psychol Brain Stud*, 1(2), 9.
- Aidar, Nur. hubungan peran keluarga dengan tingkat kecemasan anak usia sekolah yang mengalami hospitalisasi yang dirawat Di Ruang III RSUD DR Pirngadi Medan. (Fakultas Keperawatan Universitas Sumatera Utara; 2011).
- Alicia S. Kunin-Batson, P., Xiaomin Lu, P., Lyn Balsamo, P., Kelsey Graber, M., & Meenakshi Devidas, P. (2016). Prevalence and Predictors of Anxiety and Depression After Completion of Chemotherapy for Childhood Acute Lymphoblastic Leukemia: A *Prospective Longitudinal Study*. 1-10. doi:10.1002/cncr.29946
- Altay N, Kilicarslan-toruner E, Sari Ç. *European Journal of Oncology Nursing* The effect of drawing and writing technique on the anxiety level of children undergoing cancer treatment. *Eur J Oncol Nurs*. 2017;28:1–6.
- American Cancer Society. (2015). A guide to chemotherapy. American Cancer Society.
- Baumester, D., Aktar, R., Ciufolini, S., Parinte, C. M., & Mondelli, V. (2016). Childhood trauma and adulthood. inflammation: a metanalysis of peripheral C-reactive protein, interleukin-6 and tumor necrosis factor- $\alpha$ . *Molecular psychiatry*; 21(5), 642.
- Edward P T Gaynor, Peter B Sullivan 2015, *Nutritional status and nutritional management in children with cancer*, *BMJ Publishing Group Ltd (& RCPCH) under licence*. ;0:1–4. doi:10.1136/archdischild-2014-306941
- Fitriani, W., Santi, E., & Rahmayanti, D. (2017). Terapi Bermain Puzzle terhadap Penurunan Tingkat Kecemasan pada Anak Usia Prasekolah (3-6 Tahun) Yang Menjalani Kemoterapi Di Ruang Hematologi Onkologi Anak. *Dunia Keperawatan*, 5(2), 65-74
- Kaplan, H. I., Sadock, B. J., & Grebb, J. A. (2010). Sinopsis psikiatri ilmu pengetahuan perilaku psikiatri klinis (II). Tangerang: Binapura Askara
- Limbers, C. A., & Larson, M. (2016). A systematic review of psychometric properties of the Pediatric Quality of Life Inventory™ 4.0 generic core scales: in pediatric cancer patients and survivors. *Expert Review of Quality of Life in Cancer Care*, 1(2), 145-152.

- Momani, TEG., Hathaway, DK., & Mandrell, B. N. (2016). Factors affecting healthrelated quality of life in children undergoing curative treatment for cancer: a review of the literature. *Journal of Pediatric Oncology Nursing*, 33(3), 228-240.
- Nurhidayah, I., Hendrawti, S., Medanii, H. S., & Adistie, F. (2016). Kualitas Hidup pada Anak dengan Kanker. *Jurnal Keperawatan Padjadjaran*, 4(1).
- Pei, JS., Hsu, PC., Chou, AK., Tsai, CW., Chang, WS., Hsiao, CL., ... & Bau, D. T. (2016). Matrix metalloproteinase 1 genotype contributes to the risk of non solid tumor in childhood leukemia. *Anticancer research*, 36(10), 5127- 5132.
- Scott JT, Prictor M, Harmsen M, Broom A, Entwistle VA, Sowden AJ, Watt I, 2010, *Interventions for improving communication with children and adolescents about a family member's cancer (Review)*. Cochrane Collaboration. Published by John Wiley & Sons, Ltd.
- Shoaakazemi M, Momeni M, Ebrahimi F, Shamloo Z. *International Conference on Education and Educational Psychology ( ICEEPSY 2012 )* The effect of group play therapy on reduction of separation anxiety disorder in primitive school children. *Procedia - Soc Behav Sci*. 2012;69(Iceepsy):95–103.
- Wahyudi, T. (2020). Faktor Psikososial Orang Tua Yang Berhubungan Dengan Kecemasan Pada Anak Dengan Kanker Yang Menjalani Kemoterapi Di Rumah Sakit Umum Daerah Dr. Moewardi Surakarta. Universitas Gadjah Mada
- Ward, E., desantis, C., robbins, A., kohler, B., & jemal, A. (2014). *Childhood And adolescent cancer statistics* , 2014, 64(2), 83-103. <https://doi.org/10.3322/caac.21219>