



The 4th Padjadjaran International Nursing Conference 2014

**Improving Quality of Life through Interdisciplinary Approach
in Health Care Settings**

HORISON BANDUNG HOTEL

JL. PELAJAR PEJUANG 45 NO. 121 BUAH BATU
BANDUNG CITY - WEST JAVA, INDONESIA
TUESDAY TO THURSDAY, 3 - 5 JUNE 2014



TWU
TEXAS WOMAN'S UNIVERSITY
DENTON DALLAS HOUSTON



Queensland University
of Technology



University
AUSTRALIA



日本赤十字社
The Japanese Red Cross Society



Chulalongkorn
University



University of
New Hampshire

THE 4th INTERNATIONAL NURSING CONFERENCE

**IMPROVING QUALITY OF LIFE THROUGH
INTERDISCIPLINARY APPROACH IN HEALTH
CARE SETTINGS**

Organized by

FACULTY OF NURSING UNIVERSITAS PADJADJARAN

in Collaboration with

TEXAS WOMAN'S UNIVERSITY COLLEGE OF NURSING

Date : Tuesday-Thursday, June, 3-5, 2014

Venue : Hotel Horison Bandung
Jalan Pelajar Pejuang No. 121 Bandung

Website : <http://pinc2014.fkep.unpad.ac.id>

Email : pinc2014@fkep.unpad.ac.id

ROOM 2 "PALLIATIVE CARE, END OF LIFE CARE" "QUALITY OF LIFE"		
Concurrent Session 1 Tuesday/ June, 3, 2014 10.30 –12.30	Concurrent Session 2 Tuesday/ June, 3, 2014 13.30 -15.30	Concurrent Session 3 Tuesday/ June, 3, 2014 16.00 -18.00
<ol style="list-style-type: none"> 1. Arif Setyo Upoyo "The Effects of Murotal Al Quran Sound on the Progress of Consciousness in Patients of Ischemic and Hemorrhagic Stroke" 2. Asri Handayani "The Families' Experience in Taking Care of the Elderly with Alzheimer in Bandung : A Phenomenological Study" 3. Etika Emaliyawati "Spiritual Care Practice By Nurses At Clinical Hemodialysis Al - Islam Hospital Bandung" 4. Ira Meharawati "Risk Factors Related To Coronary Heart Disease (CHD) In Cardiac Clinic" 5. La Rangki "The Lived Experience Of Post Hospitalized Colostomy Patients In Bandung, Indonesia" 6. Muthia Mutmainah "Spirituality In Child Bearing Women" 7. Yanny Trisyani An Exploration of the Role of Nurses Working in Emergency Care Services in General Hospital West Java Indonesia: A Grounded Theory Study 	<ol style="list-style-type: none"> 1. Masdalifah Pasaribu "Satisfaction Of Health Services Elderly At Abdi Dharma Asih Social Services Unit In Binjai Year 2013" 2. Meilita Eggune "Nurses Perception Toward End-Of-Life Care In Neurosurgical Critical Care Unit (NCCU) Dr. HasanSadikin Hospital, Bandung" 3. Muhammad Zulfatul "Bereavement Life Review As A Supportive Intervention For Enhancing Quality Of Life Among Stroke Family : A Literature Review" 4. Nita Fitria "Relationship To Patient Satisfaction With Patient Spiritual Guidance In The Motivation Recovered At Darussalam Room Al-Islam Hospital Bandung" 5. Oka Tiranti "Effect of Structured Discharge Planning against Quality of Life of Patients with Diabetes Mellitus Type II" 6. Remita Hutagalung "Relationship Between Self Efficacy abd Quality of Life in Patients With Percutaneous Coronary Intervention at Dr. HasanSadikin Hospital, Bandung" 7. Weni Widiyasari "Emotional Freedom Techniques (EFT) As Complementary Therapy To Overcome Psychological Problems In Critical Patients : Literature Review" 	<ol style="list-style-type: none"> 1. Juleha "Quality Of Life Among Patient With Parkinson In Neurological Clinic HasanSadikin Hospital" 2. Ani Rasiani "Review Process In Disaster Victim Identification Of Nursing Forensic" 3. Yosi Oktarina "Factors Affecting Endotracheal Tube (ETT) Cuff Pressure On Patient With Mechanical Ventilation" 4. Dyah Setyorini "Nurses Professional Liability Over Patient Safety Incidents in The Determination of Location of Stoma Surgery at The Hospital at The Abdomen Associated With Law No. 44 Th 2009 About RS Juncto About Health Law" 5. Dwi Novrianda "Factors that Associated with Quality of Life of Acute Lymphocytic Leukemia's Children who Undergoing Chemotherapy in Chronic Ward Pediatric Inpatient Dr. M. Djamil Hospital, Padang" 6. Devi Darliana "The Relationship Between Anxiety And Depression With The Qualityof Life In Patients Undergoing Hemodialysis" 7. Marlina "Lifestyle Relationship With Stroke Prevention Measure Stobe For Hypertension Patient Sin Polyclinic Disease General Hospital Dr. ZainoelAbidin Banda Aceh 2012"

Factors that Associated with Quality of Life of Acute Lymphocytic Leukemia's Children who Undergoing Chemotherapy in Pediatrics Ward for Chronically ill Patients in Dr. M. Djamil Hospital, Padang

Dwi Novrianda

Lecture of Nursing Faculty, Andalas University
Correspondence email : dwinov_82@yahoo.co.id

Abstract

Background. Chemotherapy advance has improved survival rate of children. However, long life can be achieved by the patient is not accompanied by achieving of better quality of life due to the secondary effects of chemotherapy on the patient's physical and psychosocial. This study was aimed to determine factors that associated with quality of life of acute lymphoblastic leukemia's children who undergoing chemotherapy in Chronic Ward Pediatric Inpatient Dr. M. Djamil Hospital, Padang. **Method.** The quantitative study with cross sectional approach has been done to 25 children by consecutive sampling. Data collection was using PedsQL™ (Pediatrics Quality of Life) 4.0 Generic Core Scale, PedsQL™ 3.0 Cancer Module, and nurse's role (Cronbach $\alpha = 0,90$). Data analysis was using Pearson's and Spearman correlation, independent t-test and Mann Whitney-U and multiple linear regression. **Result findings.** The results revealed that there was a relationship between chemotherapy phase and nurse's role with generic and cancer module quality of life ($p < 0,05$). **Conclusion.** Nurse's role was a predominant factor of generic and cancer module quality of life. Thus, it is necessary to increase role of nurse by giving education about treatment and management of chemotherapy side effects.

Keywords: Cancer, chemotherapy, generic quality of life, nurse's role.

Factors that Associated with Quality of Life of Acute Lymphocytic Leukemia's Children who Undergoing Chemotherapy in Pediatrics Ward fo Chronically Ill Patients in Dr. M. Djamil Hospital Padang

Dwi Novrianda¹

¹Faculty of Nursing Andalas University, Kampus Unand Limau Manis Kecamatan Pauh, Padang 25163, Indonesia

E-mail: dwinov_82@yahoo.co.id, Phone number/Facsimile: +62 751 779233

Introduction

Acute lymphoblastic leukemia is the most common type of leukemia in children and its about 75-80% (Tomlinson, 2005). The Leukemia & Lymphoma Society (2003) also mentions that acute lymphoblastic leukemia is the leading cause of death in children aged 1-15 years (Lupia & Biega, 2006). In 2012, cancer accounted for approximately 10% of deaths in children in Indonesia (Data and Information Center [PERSI], 2012). Acute lymphoblastic leukemia occupies top rank among cancer who were treated in Dr. M. Djamil Padang as many as 186 or 35.12% (Nurse's note, 2012).

Intensive treatment of acute lymphoblastic leukemia has a tendency to cause secondary effects (Dorantes-Acosta et al., 2012) but can prolong survival (Litzelman, Catrine, Gangnone, & Witt, 2011; Chiou, Jang, Liao, & Yang, 2010; Klassen, Strohm, Maurice-Stam, & Grootenhuis, 2010; Roddenberry & Renk, 2008) that can lead to physical and mental stress on the patient and family (Yamazaki, Sokejima, Mizoue, Eboshida, & Fukuhara, 2005). Distress in patients with cancer will have an impact on patient's quality of life (Vitek, Margaret, & Stollings, 2007).

Science and practice of nursing states quality of life as a unique concept. Knowledge and better understanding of quality of life in children who have cancer is very important and useful for planning of treatment or caring, decision making (Roddenberry & Renk, 2008; Dorantes-Acosta et al., 2012; Yarbrow et al., 2011 ; Sung et al., 2009), providing supportive care (Dorantes-Acosta et al., 2012; Yarbrow et al., 2011; Sung et al., 2009), and evaluating the effectiveness of treatment or caring (Baggott et al., 2011).

Studying quality of life in children who have cancer and leukemia in Lebanon (Sabbah, Akoum, Droubi, & Mercier, 2012), Turkey (Tanir & Kuguoglu, 2011), China (Ji et al., 2011), Japan (Tsuji et al., 2011), Mexico (Castillo-Martinez et al., 2009), Dr. RS. Sardjito Yogyakarta, Indonesia (Sitaresmi, Mostert, Gundy, Sutaryo, & Veerman, 2008) using PedsQL™ 4.0 Generic Core Scale reported that they are useful for measuring and detecting changes in children who have cancer and leukemia either during therapy and survival. Therefore, in this study used the instrument.

Quality of life's value of children who have chronic conditions are influenced by numerous variables, including child variable (demographic, diagnosis, treatment), parent variables (education, occupation, marital status, and chronic conditions of primary caregivers), family variables (sibling conditions, family income, and savings) (Sung et al., 2009). In this study, the point that distinguish with previous studies lies in the independent variables i.e additional nurse's role in health care.

Health care during intervention is required to improve the normal development of children that can facilitate coping of illness and treatment (Sitaresmi et al., 2008). Various role of nurses in health care such as the provision of psychosocial support (Hatzmann, Maurice-Stam, Heymans, and Grootenhuis, 2009; Panepinto, Hoffmann, & Pajewski, 2009; Sitaresmi et al., 2008), psycho-education (Thong, Mols, Coebergh, Roukema, de Poll-Franse, 2009), and caring can increase the authority and control of patient in self-management of disease and treatment-related symptoms (Thong et al., 2009). This study aimed to determine the factors associated with the total score and subscale of PedsQL™ 4.0 Generic Core Scale in children with acute lymphoblastic leukemia who undergoing chemotherapy in Dr. M. Djamil Padang.

Methods

This research was a quantitative and it used analytic descriptive design with cross sectional approach. Research has been carried out in Pediatric Inpatient, Dr. M. Djamil Hospital Padang on 25 children with acute lymphoblastic leukemia undergoing chemotherapy with consecutive sampling technique. The study was conducted in April to May 2013. This study has obtained ethical approval from the Research Ethics Committee of the Faculty of Nursing Science, University of Indonesia Jakarta and Dr. M. Djamil Hospital.

The instrument used in this study was patient's medical record, family socioeconomic status questionnaire, the role of nurse's questionnaire and PedsQL™ 4.0 Generic Core Scale developed by Dr. James W. Varni, P.h.D. The role of nurse's questionnaire was developed from the theory of nurse's role Graham & Price (2005) and Douglas et al. (2009) which states the role of nurse as facilitator, educator and support provider. The questionnaire consists of 22 items covering role of care delivery (7 items), information provider (9 items) and supporter (6 items). The scale used was a Likert scale with response options ranging from the range 0 = never to 2 = almost always.

Reliability and validity of nurse's role obtained coefficient alpha value of 0.900 and item-total correlation coefficient > 0.3 . Further questionnaires PedsQL™ 4.0 Generic Core Scale has an internal consistency reliability values (Cronbach's $\alpha=0.929$) and item-total correlation coefficient > 0.3 . The analysis used frequency distribution, Pearson Product Moment Correlation test, independent t-test and multiple linear regression. Non-parametric test was used when findings were not distribute normally that is Spearman's rho and Mann Whitney-U.

Results

Table 1 indicates that mean age of respondents were 6.9 years and standard deviation was 3.5 that is the youngest 2 years and the oldest 14.4 years. The majority of respondents were in the age group $> 2-5$ years as many as 10 respondents (40%) and male gender with a number of 17 respondents (68%). Nonintensive chemotherapy as many as 14 respondents (56%). High socioeconomic families were 14 respondents (56%). Subsequent data showed that mean score of nurse's role was 23 and standard deviation was 6.8 with lowest score 11 and the highest 31.

Mean total score PedsQL™ 4.0 Generic Core Scale of acute lymphoblastic leukemia's children were 69.2. This result was lower than the research of Varni et al. (2002) was 72.20. Univariate analysis found that the majority of the total score PedsQL™ 4.0 Generic Core Scale was poor (64%) (Table 2).

There was no significant relationship between age and mean total score and subscale PedsQL™ 4.0 Generic Core Scale. There was a positive and significant relationship between

age and mean procedural anxiety subscale scores and anxiety treatment ($p < 0.05$). Furthermore, there was relationship score of nurse's role with mean total score, physical, and emotional subscale of PedsQL™ 4.0 Generic Core Scale significantly with the direction of relationship was positive ($p < 0.05$) (Table 3). Gender and socioeconomic family were not related to each subscale and total score of generic quality of life. In the phase of chemotherapy, found significant differences in mean total and psychosocial subscale scores of PedsQL™ 4.0 Generic Core Scale between nonintensive and intensive phase ($p < 0.05$) (Table 4).

Having obtained the regression test found nurse's role as the most dominant factor associated with PedsQL™ 4.0 Generic Core Scale. Regression coefficient of nurse's role and chemotherapy phase were 0.629 and 6.5 and constanta was 43.003. This means that if score of nurse's role 0 then total score of the generic quality of life was 43.003. Each increasing of 1 score of nurse's role will increase total score quality of life 0.629 after it was controlled by phase of chemotherapy.

Discussion

In this study, more respondents were in the age group $> 2-5$ years (40%). The majority of respondents (68%) were boys. This is consistent with literature that the highest incidence of acute lymphoblastic leukemia occurred in the first 5 years of life (Tomlinson, 2005, Lanzkowsky, 2011) and the majority of patients with acute lymphocytic leukemia were boys (Tomlinson, 2005).

Univariate analysis found that approximately 60% of respondents considered that role of the nurse as educator was categorized as either where nurses have provided information regarding the pain experienced by the child, and how to overcome the causes of sickness, often causing pain and how to cope with changes in mood. Furthermore, approximately 36% of respondents considered that nurses had a good supporter role where nurses soothe children during invasive action, involve parents during painful procedures. However, only 16% of respondents felt that nurse's role as caregiver well. This is possible because the majority of respondents were toddler and pre-school (64%) so that parents especially mothers always are beside child and give child self-care such as bathing, changing of clothes, helping children during bowel movements and urinate.

In this study, mean total score PedsQL™ 4.0 Generic Core Scale of acute lymphoblastic leukemia's children was lower than Varni et al. (2002) studies. This is possible because mean scores for each subscale are under Varni findings. Besides most of respondents were in the phase of intensive chemotherapy (44%) who require treatment frequency is more frequent and aggressive. Psychosocial subscale scores gained higher than physical subscale. These results were consistent with research of Sabbah et al. (2012), Sung et al. (2010), Sitaresmi et al. (2008), and Varni et al. (2002). Score of emotion in this study was similar to studies Varni et al. (2002). The existence of emotional problems can be caused by a secondary reaction of chemotherapy treatment (Castillo-Martinez et al., 2009; Scarpelli et al., 2008) or lack of support (Scarpelli et al., 2008).

Social subscales in this study and Varni et al. (2002) were highest among others. This is possible because generally acute lymphoblastic leukemia's children have undergone chemotherapy more than 1 month even children with chemotherapy maintenance phase is more than 1 year so they had to adapt to the conditions and have difficulty relating to others

or peers. Study of Sitaresmi et al. (2008), Sabbah et al. (2012), and Arslan, Basbakkal, and Kantar (2013) also showed that social score was the highest score.

The lowest scores was obtained by school subscale. The results are consistent with study of Varni et al. (2002), Sitaresmi et al. (2008), Sabbah et al. (2012) and Arslan et al. (2013). Research Baggott et al. (2011) also reported that physical scores and schools for children of cancer was significantly lower than healthy children. This is due to chronic disease conditions, treatment of acquired and must undergo treatment in hospital so cause high rates of school absenteeism. The low physical function in children due to possibility of chemotherapy treatment can also reduce function of school.

There was no difference in mean total and subscale scores PedsQL™ 4.0 Generic Core Scale among boys and girls. This was most likely due to demands of globalization on gender role expectations and modification of support resources. In this study, there was significant difference in mean total score PedsQL™ 4.0 Generic Core Scale and psychosocial subscales between intensive chemotherapy and nonintensive. This was possible because the children in intensive phase have more physical problems and pain than children in nonintensive phase. In general, acute lymphoblastic leukemia chemotherapy protocols involving glucocorticoids. The side effects of glucocorticoids are changes in mood and behavior, concentration problems, sleep disturbances, increased appetite, and increased pain.

There was no significant difference in mean total and subscale scores PedsQL™ 4.0 Generic Core Scale between poor and high socioeconomic. These result was consistent with Sitaresmi et al. (2008) research. This was probably because almost families (88%) have health insurance so that relevant sources of funds to support the treatment of children is not a major problem that can affect quality of life of children.

There was moderate correlation, positive and significant correlation between mean score of nurse's role with mean total score PedsQL™ 4.0 Generic Core Scale, physical and emotional subscale. Improving survival rates of children with cancer it is necessary to improve quality of nursing care so as to improve quality of life for children.

Variable of nurse's role is associated with quality of life of acute lymphoblastic leukemia's children who undergoing chemotherapy was the most dominant factor. These results were supported by previous research has not yet found due to similar studies. However, attempts to answer this result can be compared with the findings of the effectiveness of an intervention to the problems of child acute lymphocytic leukemia.

For example, after the music therapy assessment increase LLA children about their feelings than ever before (Barrera, Rykov, & Doyle, 2002), lower pain scores, heart rate, and respiratory rate in the intervention group both during and after lumbar puncture, lower scores anxiety in the intervention group both before and after lumbar puncture (Nguyen, Nilsson, Hellstrom, & Bengston, 2010). This suggests that music therapy is beneficial in patients with pediatric hematology/oncology hospitalized.

American Pain Society standards for pain management in cancer are the recommended combination of pharmacological and psychosocial approaches. A meta-analysis concluded that psychosocial interventions have the medium size effects on the severity of pain and interference caused by pain (Gorin et al., 2011). Suzuki & Kato (2003), Kazak (2005) stated that psychosocial support may be provided by parents, schools, peers, and technologies such as games, education software.

As research conducted by Sitaresmi, Mostert, Schook, Sutaryo, & Veerman (2009) reported that one reason of rejecting the treatment of children acute lymphoblastic leukemia in developing countries such as Indonesia is dissatisfaction with the health care provider. Thus it is necessary to increase quality of service and adequate management of side effects through role performance of nursing care and optimal health. Furthermore, the forms that are proven significantly effective interventions addressing children's problems, especially acute lymphoblastic leukemia can be realized by either a nurse manager, facilitator, caregivers, educators, and supporter. The results can also be used as preliminary data to conduct further research on the effectiveness of nursing interventions on quality of life of children acute lymphocytic leukemia through experimental studies.

Acknowledgements

The authors wish to acknowledge the support of the team of the Mapi Research Trust Institute and Mr. James W. Varni. We are grateful to Mrs. Yeni Suki, S. Kp. and Mrs. Reni Deswita, A.Md., the head and pediatric team in Chronic Inpatient Dr. M. Djamil Hospital Padang for all their support. We also thank to all children and parents that participated, without whom their study would not have been possible.

Conflict of Interest

There is no conflict of interest.

References

1. Arslan, F. T., Basbakkal, Z., & Kantar, M. (2013). Quality of life and chemotherapy-related symptoms of Turkish cancer children undergoing chemotherapy. *Asian Pacific Journal of Cancer Prevention*, 14(3): 1761-1768.
2. Baggott, C. R., Dodd, M., Kennedy, C., Marina, N., Matthay, K. K., Cooper, B., & Miaskowski, C. (2011). An evaluation of the factors that affect the health-related quality of life of children following myelosuppressive chemotherapy. *Supportive Care in Cancer*, 19(3), 353-61.
3. Barrera, M. E., Rykov, M. H., & Doyle, S. L. (2002). The effects of interactive music therapy on hospitalized children with cancer: A pilot study. *Psycho-Oncology*, 11(5): 379-388.
4. Castillo-Martinez, D., Juarez-Villegas, L. E., Palomo-Colli, M. A., Medina-Sanson, A., & Zapata-Tarres, M. (2009). Quality of life in children with acute lymphoblastic leukemia during induction therapy with PedsQL Cancer Module. *Bol Med Hosp Infant Mex*, 67, 12-18.
5. Chiou, S., Jang, R., Liao, Y., & Yang, P. (2010). Health-related quality of life and cognitive outcomes among child and adolescent survivors of leukemia. *Supportive Care in Cancer*, 18(12), 1581-7.
6. Dorantes-Acosta, E., Villasis-Keever, M. A., Zapata-Tarres, M., Arias-Gomez, J., Escamilla-Nunez, A., Miranda-Lora, A., , & Garduno-Espinosa, J. (2012). Quality of life in Mexican children with acute lymphoblastic leukemia affiliated with the Seguro Popular insurance program. *Bol Med Hosp Infant Mex*, 69(3), 230-241.

7. Douglas, C., Rebeiro, G., Crisp, A., & Taylor, C. (2009). *Potter and Perry's fundamentals of nursing - Australian version*. Australian: Elsevier.
8. Gorin, S. S., Krebs, P., Badr, H., Janke, E. A., Jim, H. S. L., Spring, B., , & Jacobsen, P. B. (2011). Meta-analysis of psychosocial interventions to reduce pain in patients with cancer. *Journal of Clinical Oncology*, 30(5): 539.
9. Graham, M., & Price, J. (2005). Chemotherapy-induced nausea and vomiting in the young person with cancer. *Cancer Nursing Practice*, 4(8): 29-34.
10. Hatzman, J., Maurice-Stam, H., Heymans, H. S. A., & Grootenhuis, M. A. (2009). A predictive model of health related quality of life of parents of chronically ill children: The importance of care-dependency of their child and their support system. *Health and Quality of Life Outcomes*, 7.
11. Ji, Y., Chen, S., Li, K., Xiao, N., Yang, X., Zheng, S., & Xiao, X. (2011). Measuring health-related quality of life in children with cancer living in mainland China: Feasibility, reliability and validity of the Chinese mandarin version of PedsQL 4.0 generic core scales and 3.0 cancer module. *Health and Quality of Life Outcomes*, 9(103), 1-13.
12. Kazak, A. E. (2005). Evidence-based interventions for survivors of childhood cancer and their families. *Journal of Pediatric Psychology*, 30(1): 29-39.
13. Klassen, A. F., Anthony, S. J., Khan, A., Sung, L., & Klaassen, R. (2011). Identifying determinants of quality of life of children with cancer and childhood cancer survivors: A systematic review. *Supportive Care in Cancer*, 19(9), 1275-87.
14. Klassen, A. F., Strohm, S. J., Maurice-stam, H., & Grootenhuis, M. A. (2010). Quality of life questionnaires for children with cancer and childhood cancer survivors: A review of the development of available measures. *Supportive Care in Cancer*, 18(9), 1207-17.
15. Lanzkowsky, P. (2011). *Manual of pediatric hematology and oncology*. Fourth edition. Burlington: Elsevier Academic Press.
16. Litzelman, K., Catrine, K., Gangnon, R., & Witt, W. P. (2011). Quality of life among parents of children with cancer or brain tumors: The impact of child characteristics and parental psychosocial factors. *Quality of Life Research*, 20(8), 1261-9.
17. Lupia, C. H. & Biega, C. (2007). *Childhood leukemia and lymphoma*. San Diego.
18. Nguyen, T. N., Nilsson, S., Hellstrom, A. L., & Bengtson, A. (2010). Music therapy to reduce pain and anxiety in children with cancer undergoing lumbar puncture: a randomized clinical trial. *Journal of Pediatric Oncology Nursing*, 27(3): 146-155.
19. Roddenberry, A., & Renk, K. (2008). Quality of life in pediatric cancer patients: The relationships among parents' characteristics, children's characteristics, and informant concordance. *Journal of Child and Family Studies*, 17(3), 402-426.
20. Sabbah, I., Sabbah, H., Sabbah, S., Akoum, H., Droubi, N., & Mercier, M. (2012). Measurement properties of the arabic lebanon version of the pediatric quality of life inventory 4.0 generic core scales for young child (5 - 7 years), and child aged 8 - 12

- years: Quality of life in urban and rural children in lebanon. *Creative Education*, 3, 959-970.
21. Scarpelli, A. C., Paiva, S. M., Pordeus, I. A., Ramos-Jorge, M. L., Varni, J. W., & Allison, P. J. (2008). Measurement properties of the Brazilian version of the pediatric quality of life inventory (PedsQLTM) cancer module scale. *Health and Quality of Life Outcomes*, 6(7), 1-11.
 22. Sitaresmi, M. N., Mostert, S., Gundy, C. M., Sutaryo, & Veerman, A. J. P. (2008). Health-related quality of life assessment in Indonesian childhood acute lymphoblastic leukemia. *Health and Quality of Life Outcomes*, 6(96), 1-8.
 23. Sitaresmi, M. N., Mostert, S., Schook, R. M., Sutaryo, & Veerman, A. J. P. (2009). Treatment refusal and abandonment in childhood acute lymphoblastic leukemia in Indonesia: An analysis of causes and consequences. *Psycho-Oncology*, 19(4): 361-367.
 24. Sung, L., Klaassen, R. J., Dix, D., Pritchard, S., Yanofsky, R., Dzolganovski, B., . . . Klassen, A. (2009). Identification of paediatric cancer patients with poor quality of life. *The British Journal of Cancer*, 100(1), 82-8.
 25. Suzuki, L. K., & Kato, P. M. (2003). Psychosocial support for patients in pediatric oncology: The influences of parents, schools, peers, and technology. *Journal of Pediatric Oncology Nursing*, 20(4): 159-174.
 26. Tanir, M. K., & Kuguoglu, S. (2011). Turkish validity and reliability of a pediatric quality of life cancer module for children aged 8-12 and parents. *Asian Pacific Journal of Cancer Prevention*, 12, 125-130.
 27. Thong, M. S., Y., Mols, F., Coebergh, J. W., Roukema, J. A., & van de Poll-Franse, L.,V. (2009). The impact of disease progression on perceived health status and quality of life of long-term cancer survivors. *Journal of Cancer Survivorship*, 3(3), 164-73.
 28. Tomlinson, D., & Kline, N. E. (2005). *Pediatric oncology nursing: Advanced clinical handbook*. Germany: Springer.
 29. Tsuji, N., Kakee, N., Ishida, Y., Asami, K., Tabuchi, K., Nakadate, H., , & Matsushima, E. (2011). Validation of the Japanese version of the pediatric quality of life inventory (PedsQL) cancer module. *Health and Quality of Life Outcomes*, 9(22), 1-16.
 30. Varni, J. W., Burwinkle, T. M., Katz, E. R., Meeske, K., & Dickinson, P. (2002). The PedQL in pediatric cancer: Reliability and validity of the pediatric quality of life inventory generic core scales, multidimensional fatigue scale, and cancer modular. *Cancer*, 94(7), 2090-206.
 31. Vitek, L., Margaret, Q. R., & Stollings, S. (2007). Distress in patients with cancer: Definition, assessment, and suggested interventions. *Clinical Journal of Oncology Nursing*, 11(3), 413-8.
 32. Yamazaki, S., Sokejima, S., Mizoue, T., Eboshida, A., & Fukuhara, S. (2005). Health-related quality of life of mothers of children with leukemia in japan. *Quality of Life Research*, 14(4), 1079-85.

33. Yarbro, C. H., Wujcik, D., & Gobel, B. H. (2011). *Cancer nursing: Principles and practice*. 7th edition. Canada: Jones and Barlett Publishers.

Tables

Table 1. Distribution of respondent according to age, gender, chemotherapy phase, family socioeconomic, and nurse's role

Variables	n (%)	Mean ± SD	CI 95%
1. Age		6,9 ± 3,5	5,5-8,4
> 2-5 year	10 (40%)		
> 5-8 year	6 (24%)		
> 8-14,4 year	9 (36%)		
2. Gender			
Boy	17 (68%)		
Girl	8 (32%)		
3. Chemotherapy phase			
Intensive	11 (44%)		
Nonintensive	14 (56%)		
4. Family socioeconomic			
Poor	11 (44%)		
High	14 (56%)		
5. Nurse's role score		23 ± 6,8	20,2-25,8
Low	10 (40%)		
High	15 (60%)		
<i>Educator</i> (> \bar{x})	15 (60%)		
<i>Suporter</i> (> \bar{x})	9 (36%)		
<i>Caregiver</i> (> \bar{x})	4 (16%)		

Table 2. Distribution of average of total and subscale score PedsQL™ 4.0 Generic Core Scale

Domain	Mean±SD	CI 95%
<i>PedsQL™ 4.0 Generic Core Scale</i>		
Physical	64,8±23,4	53,1-76,4
Psychosocial	70,2±15,5	62,5-77,9
Emotional	71,1±22,9	59,7-82,5
Social	78,1±18,7	68,8-87,4
School (n=18)	61,4±17,6	52,7-70,1
Total score	69,2±16,2	61,1-77,2

Table 3. Correlation analysis of age and nurse's role score with PedsQL™ 4.0 Generic Core Scale

Domain	Age*r(p)	Nurse's role score*r(p)
<i>PedsQL™ 4.0 Generic Core Scale</i>		
Total score	-0,025 (0,905)	0,465 (0,019)
Physical	-0,081 (0,701)	0,433 (0,031)
Psychosocial	0,018 (0,932)	0,380 (0,061)
Emotional	0,239 (0,249)	0,432 (0,031)
Social	-0,098 (0,640) ^a	0,176 (0,400) ^a
School	-0,176 (0,484)	0,204 (0,418)

^aUji Spearman's rho

Table 4. The difference of mean scores PedsQL™ 4.0 Generic Core Scale between gender, phase of chemotherapy and socio-economic family

Domain	Gender		Chemotherapy phase		Socio-economic family	
	Boy Mean (SD) P	Girl Mean (SD)	Intensive Mean (SD) p	Nonintensive Mean (SD)	Low Mean (SD) P	High Mean (SD)
<i>PedsQL™ 4.0 Generic Core Scale</i>						
Total score	68,7 (14,6) 0,630	65,3 (18,7)	59,6 (15,6) 0,021	73,9 (13,1)	71,6 (15,2) 0,268	64,5 (15,9)
Physical	68,0 (20,8) 0,144	53,9 (23,7)	55,1 (22,4) 0,096	70,1 (20,7)	64,8 (24,9) 0,807	62,5 (21)
Psychosocial	68,6 (14,4) 0,925	69,3 (18,9)	61,4 (15,8) 0,030	74,7 (13)	73,5 (14,7) 0,190	65,2 (15,7)
Emotional	69,4 (17,6) 0,393	61,3 (29,4)	57,7 (23,4) 0,063	73,9 (18,1)	73,2 (15,2) 0,199	61,8 (25,2)
Social	12 (204,5) ^b 0,317	15,1 (120,5) ^b	10,5 (115,5) ^b 0,117	15,0 (209,5) ^b	14,9 (163,5) ^b 0,243	11,5 (161,5) ^b
School	57,9 (15,9) 0,247	68,3 (20,2)	56,9 (16,5) 0,344	65 (18,4)	63,8 (11,6) 0,602 ^c	59,5 (21,7)

^bUji Mann-Whitney U; ^cVarian tidak sama