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# HYPNOPARENTING EFFECTS TOWARDS FATIGUE AS AN IMPACT OF CHEMOTHERAPY AMONG PEDIATRIC PATIENTS WITH ACUTE LYMPHOBLASTIC LEUKEMIA

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**Abstract**

The management of fatigue among pediatric patients with lymphoblastic leukemia does not become a priority apart from the cancer management itself. Hence, it is necessary to put an attention towards this issue by giving another complementary therapy for the patient called hypnoparenting. By implementing hypnoparenting will decrease the level of fatigue because of the chemotherapy process. Therefore the purpose of study was to investigate the effect of hypnoparenting towards fatigue prevalence as an impact of chemotherapy among pediatric patients with Acute Lymphoblastic Leukemia. This research utilized quasi experiment before after study. The population of the study was pediatric patients (5-12 years old) who suffered by Acute Lymphoblastic leukemia under chemotherapy treatment at RSUD Ulin Banjarmasin. The study was started on Mei 2016 until June 2016 with the total participants were 30 pediatrics patients. The data analysis used dependent t-test with 95% CI and p value <0.05. According to the mean score of 30 patients in the range of age 5-12 years revealed ; before and after hypnoparenting implementation, The mean score was different 5.30 and p value 0.0003, 95% CI (2.681 – 7.919). There was a significant difference on fatigue level among the patients before and after hypnoparenting implementation.

**Keyword:** acute lymphoblastic leukemia, fatigue, hypnoparenting

**Abstrak**

Fenomena yang sering terjadi, manajemen kelelahan untuk pasien anak dengan kanker belum menjadi prioritas dalam manajemen efek samping terapi kanker. Tujuan dari penelitian ini untuk mengetahui pengaruh *hypnoparenting* terhadap kejadian kelelahan akibat kemoterapi pada anak dengan *acute lymphoblastic leukemia* di RSUD Ulin Banjarmasin. Penelitian ini menggunakan desain studi quasi eksperimen dengan jenis *before after study*. Populasi dalam penelitian ini adalah anak usia 5-12 tahun yang menderita kanker dengan jenis *acute lymphoblastic leukemia* yang sedang menjalani kemoterapi di RSUD Ulin Banjarmasin yang terdiri dari 30 orang anak dengan waktu penelitian dari Mei 2016 sampai Juni 2016. Analisa menggunakan uji beda 2 mean dependen dengan 95% CI dan *p value* < 0,05. Berdasarkan perhitungan rerata tingkat kelelahan pada anak usia 5 – 12 tahun yang berjumlah 30 responden didapatkan sebelum dan sesudah dilakukan *hypnoparenting* yakni beda mean sebesar 5,30 dan *p value* 0.0003, 95% CI (2.681 - 7.919). Terjadi penurunan rerata skor secara bermakna pada tingkat kelelahan sebelum dan sesudah dilakukan *hypnoparenting*.

**Kata Kunci***: hypnoparenting*, kelelahan, leukemia limfoblastik akut

## Introduction

The type of cancer with the highest prevalence in Indonesia as a developing country is Acute Lymphoblastic Leukemia (ALL). With the number of prevalence is 20,8 patients in a million for a year (Isselbacher *et al.*, 2000). Incident of Acute Lymphoblastic Leukemia is 1/60.000 people/year with 75% of the patient less than 15 years old, the highest incident is on 3–5 year old (Hoffbrand & Paul, 2011).

Generally, the treatment for ALL is chemotherapy. It consists of the first stage that is induction stage which is occurs in a hospital for 4–6 weeks, follows by consolidation stage

and maintenance stage, with total treatment during 2–3 years (Ward, et al., 2014).

One of the symptoms of chemotherapy treatment which is experienced by the patients is fatigue/tiredness. The main problem among ALL patients under chemotherapy treatment is tiredness. They will experience this uncomforted felling in several days after that process. Hemoglobin and corticosteroid consumption are the related factors of fatigue until it achieves the peak of that symptom in 5 days after chemotherapy (for some under steroid therapy in the same time) (Yeh, et al., 2008).

This is a common phenomenon recently, and this issue does not a priority in the management of cancer patient specifically in reducing the side effect of chemotherapy treatment. The pediatric patients are the vulnerable population who being ignored regarding that problem (Mitchell, 2010).

There are some complementary therapies to reduce the malaise among ALL patient. One of the interventions is body and mind intervenetion such like yoga, acupuncture, massage, touch therapy, music therapy, relaxation, hypnoparenting, etc (Bower, et al., 2014).

Complementary therapy with a special purpose to increase the level of relaxation of the patient due to chemotherapy is hypnoparenting. Hypnoparenting works to create unawareness among the pediatric patients. It stimulates the neurotransmitter or chemical material in the brain to relay, modulate, and press the signal between the neurons and other cells such like; serotonin, dopamine, norepinephrine, and noradrenaline. The chemical materials produce the hormones to being absorbed by the hippocampus and distributed to the whole brain cells. One of the hormones produced is melatonin, which could help to relax, feel comfort, and sleepy (Faeni, 2015).

The implementation of hypnoparenting is expected to decrease the tiredness due to chemotherapy procedure. It will have a good impact for the patient. Hence, the nurses could avoid the tiredness experience of the patients and improving the quality of nursing care specifically for the patient with ALL.

Based on that phenomena, the researcher is interested to conduct a research about Hypnoparenting effects towards fatigue prevalence as an impact of chemotherapy among pediatric patients with Acute Lymphoblastic Leukemia.

## Methods

Ethical committee at RSUD Ulin Banjarmasin has assessed and given the ethical approved regarding the study protocol. Generally, this study follows the ethical principal for the specific health study. The participants were willing to join in this study and they were given the explanation and socialization about the study (Including informed consent signed) before the study was conducted.

This study utilized the quasi-experimental design before-after study. The population in this study was pediatric patients with the range of age 5–12 years old who suffered by ALL under the chemotherapy treatment in RSUD Ulin Banjarmasin. Total of the population were 30 patients and all patients were recruited as subjects of study.

Sampling method used exhaustive sampling. The participants of this study were pediatric patients with the range of age 5–12 years old who suffered by ALL under the chemotherapy treatment in RSUD Ulin Banjarmasin from May until June 2016. The exclusion criteria were: ALL patients who do not follow the chemotherapy treatment and ALL patients under chemotherapy treatment with Glasgow Coma Scale below 13.

ALL patients with inclusion criteria would be measured the level of tiredness to decide the first score by utilizing Multidimensional Fatigue Scale (Varni, 2014). Then, they were in-

tervened by hypnoparenting. Lastly, the researcher measured the level of tiredness after the intervention. The hypnoparenting intervention was done 3 times a week for 10–15 minutes in the afternoon. The score or the level of tiredness before and after the intervention would be compared.

This study to fulfill the validity of the content, the researcher conducted the process of translation (translation process from English to Indonesian and then from Indonesian to English) on Pediatric Quality of Life Inventory (PedsQL) Multidimensional Fatigue Scale. The goal is to ensure that language transfers made by the researcher match the actual contents of the instrument considering the instruments used in English.

Pediatric Quality of Life Inventory (PedsQL) Multidimensional Fatigue Scale is a questionnaire used to measure the degree of rotation in general, on the contrary, sleep and cognitive rest. This questionnaire has been used in research related to bait in children. Several studies have tested the Multidimensional Fatigue Scale on the basis of multidimensional Fatigue Scale measurements in measuring good fatigue originating from children as well as from parental reports. The study was conducted on children aged 8–18 years as many as 216 respondents. The results of this study indicate that the level of reliability of Multidimensional Fatigue Scale instruments is from 0.70–0.90 for sleep/rest dimensions (children report shows $\alpha = 0{,}55$) (Nascimento, et al., 2015).

Fatigue could be assessed according to the report from the patient itself. This instrument can be implemented for pediatric patient with the range of age 5–12 years old. It consists with 18 item questions including three dimensions such like; fatigue in generaly (6 questions), fatigue during sleeping or napping (6 questions) and fatigue in cognitive response (6 questions). The patients were asked about their fatigue intensity in a week by likert scale 0–4. This questionnaire would be filled up by the researcher according to the response from the respondents. If every question were answered with "never" then the score was 0; "almost not a problem" was 1, seldom was given 2 point, and often was given 3 point, and lastly was "always" with 4 point. For patients less than 5–7 years were asked about the fatigue intensity during a week with 3 point in likert scale.

Hypnoparenting was done according to standard operating procedure (SOP). It was implemented in 10–15 minutes. It divided into 3 stages: Pre-induction stage, trance, autosuggestion, post-hypnosis, and termination (Faeni, 2015).

In this study, questionnaires were used to find out the characteristics of respondents consisting of the number of respondents (medical record number), age, gender, pain and anxiety of the child as well as some complementary data from medical record status that was first diagnosed with acute lymphoblastic leukemia, chemotherapy protocol used and the phases of chemotherapy that children are currently living. To assess pain at 5–12 years old, researchers used Face Pain Rating Scale from Wong-Baker with a score range of 0–10 with the following explanation: Value 0: no pain, Value 1–3: mild pain, Value 4–6: Moderate pain and Value 7–10: Severe pain. To assess children's anxiety levels, researchers used Hamilton Rating Scale For Anxiety (HRS-A). These measurements ranged from 14 symptom groups, each group detailed again with more specific symptoms. Each score score of the 14 groups of symptoms is summed and the summation can be known to the degree of anxiety: <14: no anxiety, 14–20: mild anxiety, 21–27: moderate anxiety and> 28: high pain.

Data were analyzed to measure and determine the fatigue level of the patients before and after the hypnoparenting. Univariate analysis in this study was conducted on age, sex, chemotherapy protocol, pain and anxiety, and presented in percentage or proportion. Bivariate analysis used dependent t-test or paired sample

test with p value 0,05 and CI 95%. Data was processing and analysis using stata.

## Result

The participants were 30 pediatric patients allowed by their parents to join the study. Based on Table 1, the characteristics of male respondents are 22 (73.3%) and women 8 (26.7%), so all children with Limphoblastic Leukemia Acute type of cancer in Ulin Banjarmasin Hospital are more common in boys than girls.

Characteristics of respondents by age, most children with cancer type Acute Limphoblastic Leukemia in RSUD Ulin Banjarmasin is in the age range 5–7 years ie as many as 19 children (63.3%) and the rest are in the age range 8–12

Table 1. Characteristic of Respondents

| Characterize | n (%) |
|---|---|
| **Gender** | |
| Male | 22 (73.3) |
| Female | 8 (26.7) |
| **Age** | |
| 5 – 7 years old | 19 (63.3) |
| 8 – 12 years old | 11 (36.7) |
| **Protocol type of chemotherapy** | |
| High | 28 (93.3) |
| Standard | 2 (6.7) |
| **Chemotherapy Stage** | |
| Maintenance Stage | 10 (33.3) |
| Intensification Stage | 4 (13.3) |
| Consolidation Stage | 9 (30.0) |
| Induction Stage | 7 (23.33) |
| **Pain** | |
| No Pain | 17 (56.7) |
| Low Pain | 7 (23.3) |
| Moderate Pain | 6 (20.0) |
| High Pain | 0 (0) |
| **Anxiety** | |
| No Anxiety | 28 (93.3) |
| Low level anxiety | 2 (6.7) |
| Moderate level anxiety | 0 (0) |
| High level anxiety | 0 (0) |

Table 2. Average Scoring of Fatigue Level Before and After Hypnoparenting

| Variable | Mean | 95% CI | p |
|---|---|---|---|
| Before fatigue | 24.13 | | |
| After fatigue | 18.83 | 2.681–7.919 | 0.001 |
| Total before-after fatigue | 5.30 | | |

years as many as 11 children (36.7%). Based on the type of chemotherapy protocol used in pediatric patients with Acute Limphoblastic Leukemia in RSUD Ulin Banjarmasin, 28 respondents (93.3%) received high risk protocol (hight risk) while 2 respondents (6.7%) got standard risk protocol.

Phases of chemotherapy children treated with Acute Limphoblastic Leukemia in RSUD Ulin Banjarmasin, most of the respondents in this research are in the maintenance phase that is 10 children (33,3%) and the lowest is in the intensification phase of 4 children (13,3%).
After chemotherapy in children with Acute Limphoblastic Leukemia in RSUD Ulin Banjarmasin, most of the respondents were 17 children (56.7%) reported no pain while 6 children (20.0%) had moderate pain. Most respondents before and after chemotherapy, reported no anxiety of 28 children (93.3%) while 2 children (6.7%) had mild anxiety.

According to the average scoring among the patients in the range of age 5–12 years old with ALL before and after hypnoparenting showed a different mean score equal to 5.30. P value based on statistic result was 0.000 with 95% CI (2.681–7.919). Hence, the conclusion would be; there was a significant difference on fatigue level among the patients before and after hypnoparenting implementation (see Table 2).

## Discussion

According to the data, the study found the average of fatigue level before given an intervention was 24.13 and after given an intervention were 18.83. Moreover, the study investigated there was a significance on fatigue level among 0,001 before and after given an intervention. This finding suggested hypnoparenting to be effective to reduce level fatigue.

Kwekkeboom, et al., (2010) investigated the intervention of mind-body against pain, fatigue, and sleep disorders among cancer patients. The type of mind-body interventions were; relaxation, hypnosis, cognitive-behavior therapy, meditation, music therapy and virtual-reality therapy. The study mentioned that those interventions could decrease the pain level, fatigue, and sleep disorders among the cancer patient.
The researcher assumes, the hypnoparenting is a complementary therapy which categorized into mind-body intervention. Because of the purpose of this therapy, is to increase the mind capacity and influence the body function and its symptoms. Hypnoparenting is one of the ways to communicate with patients' unconscious mind by giving positive suggestions to change the behavior of the patients.

According to Roy's theory (Tomey & Alligood, 2006) about "Adaptive System", which is related to fatigue level and hypnoparenting intervention, Fatigue is a main factor influences the functional status and the quality of life of the patients. It has a negative impact towards physical productivity, mood, cognition, school output, and social interaction.

Fatigue can interfere with the daily function of children and lead to decreased activity daily living (ADL). Inadequacy of assistance in doing ADL will disrupt the self-concept so that it can degrade the quality of life. According to Diaz et al., (2008) in terms of the impact on daily life caused by fatigue, 58.3% of patients experience limitations in self-care (bathing, dressing, and undressing); 69.8% had an impact on leisure activities and 71.4% was limited to social activities.

Many negative effects caused by fatigue, it will decrease the health status of the patient physically and biologically, hence it is so important to influence the patients to realize their potential adaptation skill. Adaptation process by using coping mechanism is utilized for self-balancing against any changes around. To improve the adaptation process the changes internally and externally, the patients need an interaction support and intervention from the nurses. Nurse has a big role to assist the patient while experiencing fatigue feeling. One

of the interventions to facilitate the patients and help them to cope that feeling is by using complementary therapy such as hypnoparenting.

According to the evaluation result, was done by the researcher among 30 respondents after experiencing hypnoparenting implementation; 15 respondents said that; their sleep pattern was changed. They supposed to get difficulties in sleeping or often wake up in the middle of the night. After hypnoparenting implementtation, the patients became more comfortable and had a good quality of sleep. 18 respondents reported they could start their daily life, such like sitting on the bed, smiling and laughing when other people are starting a conversation with them. This report showed that hypnoparenting activity helps the pediatric patients to create their coping mechanism within their selves in order to cope positively and adaptively towards physical and psychological changes.

Leukemia and Lymphoma Society (2013) mentioned some factors cause fatigue felling among the patients with cancer, such as the disease itself and the effect of the treatment. Another predisposition factor as a trigger is anemia. Anemia causes the decreasing of the oxygen in the body, nutrition, and energy, hence the anemia patient experience the tiredness. Cancer would be related with anemia and it could create a bad impact within the body and trigger many complications including: fatigue, dyspnea, palpitation, dizziness, and lower cognitive function (Wong, 2008).

Lower cognitive function among the cancer patients is signed by concentration disorder, having a problem to finish the task in hand, decreasing memory, and easy to forget. Leung, Chan, dan He (2000) identified the impact of tiredness within the patients after recover from the cancer disease such like; growth disorder, decreasing the memory, short-term inability, study disorder, hormonal problem and another complication including secondary cancer.

The limitation of this study; there was not a blinding method or another person apart from the researcher who did a measurement before and after the hypnoparenting intervention. The researcher also did not have enough time to collect many data in order to get many respondents more than 30, hence the respondents' characteristic were not vary. The implementtation of hypnoparenting was not done in a special room because of the room limitation in the hospital. Hence the implementation was finished in the pediatric ward with many other patients with their parents in the same room and the researcher could not control the crowded around that room.

## Conclusion

There was a significant decreasing the average score of fatigue level before and after the hypnoparenting implementation. In term of general fatigue and fatigue during sleeping/ napping, the effect of hypnoparenting could decrease the fatigue level, in contrary the implementation did not work to decrease the cognitive fatigue (HY, YR, INR).

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