



## APPLICATION OF CALCBABA COMFORT THEORY IN NUTRITIONAL PROBLEMS IN CHILDREN WITH CANCER: CASE STUDY

**Ni Kadek Sriasih<sup>1\*</sup>, Allenidekania<sup>2</sup>, Happy Hayati<sup>2</sup>**

<sup>1</sup>Undergraduate Nursing Study Program, Faculty of Health, Institut Teknologi dan Kesehatan Bali, Renon, Denpasar Selatan, Denpasar, Bali 80227, Indonesia

<sup>2</sup>Department of Pediatric Nursing, Faculty of Nursing, Universitas Indonesia, Jl. Prof. DR. Sudjono D. Puspongoro, Pondok Cina, Beji, Depok, West Java 16424, Indonesia

\*[sriasih.kadek@gmail.com](mailto:sriasih.kadek@gmail.com)

### ABSTRACT

Chemotherapy is a cancer therapy that can prevent the development and spread of malignant cells, but causes various side effects (loss of appetite, nausea, vomiting, mucositis, changes in taste, pain, fatigue, dry mouth, diarrhea, constipation). These side effects result in discomfort for children with cancer, in more severe conditions it can worsen the child's nutritional status due to inadequate nutritional intake. Nursing care using the Kolcaba comfort approach can be applied to overcome children's discomfort cancer who experience nutritional imbalance problems. The method used is a case study. The comfort needs in the five management cases are assessed based on the physical, psychospiritual, environmental and sociocultural contexts. The comfort interventions provided include standards of comfort, coaching, and comfort food for the soul. Nursing evaluation of the problem of nutritional imbalance which is a physical aspect of the patient, namely, the comfort type for the five children is ease comfort and three of the five children also have transcendence type comfort for other aspects. Kolcaba's Comfort Theory can be applied to pediatric cancer patients who experience nutritional disorders and provides opportunities for nurses to develop innovative interventions to improve the quality of nursing care.

Keywords: cancer; nutritional imbalance; kolcaba's comfort theory

<b>First Received</b> 10 September 2023	<b>Revised</b> 14 September 2023	<b>Accepted</b> 30 September 2023
<b>Final Proof Received</b> 30 October 2023		<b>Published</b> 28 November 2023
<b>How to cite (in APA style)</b> Sriasih, N. K., Allenidekania, A., & Hayati, H. (2024). Application of Calcaba Comfort Theory in Nutritional Problems in Children with Cancer: Case Study. <i>Indonesian Journal of Global Health Research</i> , 5(4), 1031-1042. <a href="https://doi.org/10.37287/ijghr.v5i4.3270">https://doi.org/10.37287/ijghr.v5i4.3270</a> .		

## INTRODUCTION

Inadequate nutrition in children during their growth and development period has an impact on children's low cognitive abilities, poor mental and emotional health, short physical growth, increased susceptibility to disease, and increased risk of mortality (Kyle & Carman, 2017). In children with cancer, nutritional disorders are one of the health problems that occur due to the side effects of cancer and chemotherapy. According to Gaynor and Sullivan (2015), factors that trigger nutritional disorders in children with cancer are nausea, vomiting, mouth ulcers, changes in taste, decreased appetite, dry mouth, painful swallowing, diarrhea, constipation and metabolic disorders.

Nausea and vomiting associated with chemotherapy and radiation therapy occur due to irritation or damage to certain cells in the digestive tract, and stimulate the release of neurotransmitters to the brain and the emetic center receives afferent impulses and coordinates afferent activity which results in vomiting (Ettinger & Lin, 2009, Hockenberry and Rodgers, 2015). Apart from nausea and vomiting related to chemotherapy, children also

experience mucositis (Cheng, 2017). This condition certainly causes discomfort and pain which causes difficulty eating and drinking. (Hockenberry & Wilson, 2015; Murshid et al., 2016; Valera, Noirrit-Esclassan, Pasquet, & Vaysse, 2015). In the end, it has an impact on reducing nutritional intake and if it lasts for a long time it can reduce nutritional status.

In their research, Zimmermann, Ammann, Kuehni, De Geest, and Cignacco (2012) found that malnutrition occurred in 5.8% of children at the time of initial cancer diagnosis, increasing to 22% of children after 30 days of therapy and after 60 days to 36%. up to 47% of children are malnourished. The results of a preliminary study found the same condition in children with cancer who were treated in the non-infectious room at RSCM Jakarta in November 2018. From medical records it is known that around 74 children and teenagers with cancer had good nutritional status, but there were around 39 people with problems with their nutritional status. the nutrition. Further assessment found that factors that influence nutritional problems in children with cancer are nausea, vomiting, dry lips, mouth ulcers, difficulty eating. These complaints were felt by 62.5% of children who were receiving chemotherapy, 47% of children with febrile neutropenia and 35.2% of children whose general condition improved.

This shows that the increase in the number of children with malnutrition occurs very quickly after the start of cancer therapy, so efforts are needed to provide nutritional support for children with cancer. Nutritional care can be one of the interventions provided with the aim of maintaining normal nutritional status and increasing children's comfort (Prevost & Grach, 2012). Professional nurses play a role in facilitating the comfort of child and adolescent patients with cancer during treatment, because cancer treatment can be a stressor that results in disruption of patient comfort (Leandro, da Silva, Lopes, Guedes, Nunes, de Sousa, Araujo, 2018).

Nursing care provided by nurses can use a nursing model approach according to the child's condition. Kolcaba's Comfort Theory can be an option for treating children with cancer. This is in line with Ebrahimipour and Hoseini (2018), explaining that Kolcaba's Comfort Theory is the right approach and not only helps assess and evaluate comfort holistically, but also helps in carrying out innovative interventions to provide comfort for children with cancer. The aim of this research is to conduct a study on the comfort theory of Colcaba on nutritional problems experienced by children with cancer.

## **METHOD**

This writing method is a case study with a nursing care approach. Nursing care is carried out by applying Kolcaba's Comfort Theory. The nursing process is carried out using critical thinking, including conducting assessments, determining nursing diagnoses, carrying out interventions, and carrying out nursing evaluations. The subjects used in this study were five children with cancer, with the criteria for the cases selected being children with cancer aged 6-18 years who experienced nutritional problems, both actual and at risk. data was collected by selecting respondents who met the inclusion criteria.

## **RESULTS**

### **Case 1**

An. D, 12 years old, female, with a medical diagnosis of stage IV nasopharyngeal carcinoma. The patient was admitted to the hospital for the second cycle of chemotherapy. Data obtained from the physical assessment, namely the relief of a lump on the left neck, the child

complained of nausea and no appetite. Kolcaba Comfort Daisies: 2 (sort of bad), there was nausea and vomiting 1x in volume  $\pm$  150 ml. The patient eats 2 to 3 tablespoons (tbsp) at each meal with (rice + animal side dishes). BB (Body Weight): 18 kg (3 months ago BB: 24 Kg), TB (Height): 136 cm, LILA (Upper Arm Circumference): 13.3 cm. BW/TB: 56.2% nutritional status: poor nutrition (CDC-NCHS curve 2000), strong kids score: 5 (high risk of malnutrition), Hb: 10.7 g/dl. Ease: BP: 103/78 mmHg, RR: 20x/min, temperature: 36.5°C, Sp O<sub>2</sub> 98%, oral nutritional intake, patient has no mouth ulcers and no pain swallowing. The physical aspect of the nursing diagnosis is nutritional imbalance: less than the body's needs. Implementation is based on nutrition management interventions consisting of standards of comfort, comfort for the soul, and coaching. Nursing evaluation after 5 days of treatment showed improvement in the condition. Ease: no nausea and vomiting, Kolcaba Comfort Daisies: 4 (very good) child wants to eat food from the hospital,  $\frac{1}{2}$  portion out of 1 portion given, child wants to gargle and brush teeth, no weight loss (for 5 days under treatment, weight increased to 18.1 kg, no canker sores.

## **Case 2**

An. S, 16 years old, male, with medical diagnosis Impending airway obstruction ec suspect Nasopharyngeal Carcinoma, 3rd day of admission. Data obtained from the physical assessment, namely, the relief of the child complained of shortness of breath, breathing frequency: 28x/minute, rhonchi were heard, there was a mass in the right mandible measuring 14x7x6cm and reddish in color and a mass in the left mandible measuring 6x5x3cm, the patient complained of headaches and intermittent pain in neck with VAS: 4, Kolcaba Comfort Daisie= 2 (sort of bad), The patient's mother said the child's appetite had decreased since 2 months ago, the patient said it hurt when chewing, the patient looked thin, LLA: 15.5 cm (nutritional status based on LILA /U: 55.7% poor nutritional status), BW: 32 kg, TB: 150 cm, BW/TB: 69% nutritional status: poor nutrition (2000 CDC-NCHS curve), strong kids score: 5 (high risk of malnutrition ), Hb: 9.8 g/dl, Leukocytes: 80,110/uL, Albumin: 3.2 g/dl, the patient looked weak. Ease: blood pressure: 110/93mmHg, pulse rate: 89x/minute, temperature: 36.0°C, oxygen saturation: 98%, shortness of breath does not increase with oxygen therapy of 2 liters per minute (nasal cannula).

Transcendence: the child cannot be given oral nutrition so he is given enteral nutrition of 2200 kcal per Nasogastric tube (NGT) in the form of F100: 8x275 ml, on the second day of treatment the patient underwent a tracheostomy to overcome breathing problems. The patient had pain and it was relieved by administering ketorolac 30 mg. Nursing diagnoses from the physical aspect are ineffective breathing patterns, acute pain, nutritional imbalance: less than body requirements and risk of infection. Implementation is carried out based on nutrition management, air way management, and infection management interventions which consist of standards of comfort, comfort for the soul, and coaching. Nursing evaluation of An. After 6 days of treatment, the patient's condition: relief, lung auscultation heard crackles, thick white sputum production, masses in the right and left mandible and erythema, the patient looked thin, weight increased from 32 kg to 32.4 kg, Hb increased from 9, 8 g/dl to Hb: 9.9 g/dl, Albumin decreased from 3.2 g/dL to 2.93 g/dL. Ease: oxygen saturation 98%, respiratory rate: 24x/minute, BP: 115/75mmHg, HR: 100x/minute, temperature: 36.0°C, nutrition per NGT F100: 8x200ml starting on day 4 good tolerance no vomiting, Kolcaba Comfort Daisie= 3 (sort of good), Transcendence: patient can adapt to his tracheostomy, shortness of breath is reduced, complaints of pain are still but reduced VAS: 2 (mild pain), pain is controlled with analgesics. The problem of ineffective breathing patterns was resolved by installing a tracheostomy, acute pain was controlled by administering analgesics. The problem of nutritional imbalance: less than the body's needs has not been completely resolved because

Hb and Albumin are still below normal values, children still have respiratory problems and infections.

### **Case 3**

An.Y, 7 years old, male, with a medical diagnosis of rhabdomyosarcoma. An. Y was taken to the hospital for the 4th cycle of rhabdomyosarcoma chemotherapy protocol. Data obtained from the physical assessment were, relief: Kolcaba Comfort Daisie= 2 (sort of bad) the child has experienced a decrease in appetite since 1 week ago, eating 2-4 tablespoons of rice every times eating, the patient looks thin, BW: 16 kg, TB: 110 cm, BW/TB: 84% nutritional status: malnutrition (2000 CDC-NCHS curve), strong kids score: 4 (high risk of malnutrition), child doesn't like eating vegetables, drinking less, dry lip mucosa. An. Y hasn't defecated on the 3rd day, the child's activity has decreased, he just lies in bed. Ease: Hb: 14 gr/dl, Albumin: 4.5 g/dl, Leukocytes: 3,830/uL, the child does not experience difficulty swallowing or mucositis. Nursing diagnosis from the physical aspect of nutritional imbalance: less than body requirements. Implementation is based on nutrition management interventions, which consist of standards of comfort, comfort for the soul, and coaching. Nursing evaluation of An. YK after 5 days of treatment, ease comfort type: no nausea, no vomiting, no mucositis, children eat more (children consume ½ portion to 1 portion at each meal), food composition is varied (rice + side dishes + vegetables), 1 cup pudding, 5 pieces of papaya, weight increased from 16 kg to 16.1 kg, child can defecate (soft consistency, no blood or mucus), 4th cycle of chemotherapy is running according to protocol, Kolcaba Comfort Daisie = 3 (sort of good), BP: 106/65 mmHg, HR: 78x/minute, temperature: 36.50C, RR: 20x/minute. This condition shows that the problem of constipation has been resolved, but the problem of nutritional imbalance less than the body's needs has not been completely resolved and nutritional status is still undernourished.

### **Case 4**

An. A, aged 7 years 8 months, male and diagnosed with osteosarcoma. An. A was admitted to hospital for chemotherapy cycle 6. An. Data obtained from the physical assessment, namely, relief: the right leg is amputated, there is a post-amputation wound on the proximal femur wrapped in gauze (the length of the wound is around 10 cm, some parts of the wound are still open and reddish in color but there is no pus), decreased appetite, child has nausea, eats 4-5 bites at each meal, LILA: 19 cm, BB: 17.5 kg, TB: 117 cm, BW/TB: 83% nutritional status: malnourished (CDC-NCHS curve 2000), but calculations nutritional status based on the ratio of LILA to the child's age (LILA/U: 101% good nutritional status), nutritional status based on strong kids score: 4 (high risk of malnutrition), Hb: 10.9 g/dl, leukocytes: 4,090/uL, value comfort daisie: 2 (feel sort of bad), FOA-A fatigue score: 20 (moderate fatigue), Braden Q score: 15 (moderate risk of damage to skin integrity). ease: the child can still eat by mouth, there are no complaints of painful swallowing and no mucositis. Nursing diagnosis from the physical aspect, namely obstacles to physical mobility, risk of nutritional imbalance: less than body requirements, damage to skin integrity, fatigue, risk of infection. Implementation is carried out based on nutritional management and infection management interventions which consist of standards of comfort, comfort for the soul, and coaching. Nursing evaluation of An. AF after 5 days of treatment, the patient's condition was relieved: vomiting once with a volume of 50 ml, on the 4th day there was liquid defecation once; ease: no signs of infection in the post-amputation wound, Kolcaba Comfort Daisie= 3 (sort of good), child still wants to eat little by little even though there is vomiting, meal portions are ¼ to ½ portion with food composition of rice+vegetable and animal side dishes+vegetables , 200 ml milk, days of fatigue reduced by rest FOA-A fatigue score: 15 (mild fatigue), BW: 17.6 kg, increased from previous BW 17.5kg, LILA: 19 cm, vital signs (BP: 110/ 80 mmHg, HR: 102x/minute,

temperature: 36.0°C, RR: 20x/minute, Sp O<sub>2</sub>: 99%). Evaluation of nursing problems in An. A, after being given nursing care for 5 days, there is a risk of nutritional imbalance: less than the body's needs still has the potential to occur because the child still has vomiting and has an inadequate appetite, the risk of infection still has the potential to occur.

### **Case 5**

An. B, 6 years old, male, with a standard risk diagnosis of Acute Lymphoblastic Leukemia (ALL). An.. Data obtained from the physical assessment, namely, relief: complaints of shortness of breath, rapid and irregular breathing, there is nostril breathing, respiratory frequency: 45x/minute, chest x-ray examination: lung consolidation suspect pneumonia, patient has fever, highest temperature 40.0°C and when assessing body temperature 38.7°C, leukocytes: 5190/uL, neutrophils: 16.6%, ANC: 882 mm<sup>3</sup> (moderate risk of infection); patient had diarrhea (5x loose stools), abdominal pain, patient looked weak, decreased appetite since 1 week before going to hospital, patient had nausea, dry lip mucosa, weight did not increase for 1 month, LILA: 21.5 cm, BB: 26 kg, TB: 120 cm, nutritional status based on BW/TB: 110% good nutrition, nutritional status based on strong kids: 4 (high risk of malnutrition), Hb decreased from 13.7 g/dl to 12 g/dl, Kolcaba Comfort Daisie= 2 (sort of bad). Nursing diagnoses from the physical aspect are ineffective breathing patterns, hyperthermia, diarrhea, risk of nutritional imbalance: less than body requirements, risk of infection. Implementation is carried out based on intervention, air way management, nutrition management and infection management which consists of standards of comfort, comfort for the soul, and coaching. Nursing evaluation of An. BA after 5 days of treatment the patient's condition showed improvement: comfort type: mother said the child's appetite had improved, the child could eat ¼ to ½ portion of food (rice+animal side dishes+vegetables) and ¼ portion of banana, BW: 25.8 kg ( decreased by 0.2kg) but weight is still normal according to age and normal nutritional status, lab results (Hb: 12.1 g/dl, leukocytes 3,630/uL, neutrophils: 33.8%, ANC: 1230 mm<sup>3</sup>), child is not short of breath again, no nostril breathing, spontaneous breathing, child has no fever, BP: 107/69 mmHg, HR: 118x/minute, temperature: 36.5°C, RR, 24x/minute, Sp O<sub>2</sub>: 98%. Evaluation of nursing problems An. B after 5 days of treatment the problem of ineffective breathing patterns resolved, hyperthermia resolved, diarrhea resolved, nutritional imbalance: less than body requirements resolved, infection resolved.

### **DISCUSSION**

This case study discusses five cases of malignancy in children, namely Nasopharyngeal Carcinoma, Rhabdomyosarcoma, Osteosarcoma, and Acute Lymphoblastic Leukemia. In the five cases of child malignancy, the same nursing problem was found, namely nutritional imbalance less than the body's needs. This is in accordance with the results of research conducted by Brinksma et al., (2015) that nutritional problems can occur in all types of cancer, both solid tumors and hematological malignancies. The causes of children with cancer experiencing nutritional imbalances that are less than the body's needs in these five cases are different. According to Gaynor and Sullivan (2015), nutritional disorders can occur in children with cancer, because they are influenced by the side effects of disease and therapy such as nausea, vomiting, mouth ulcers, changes in taste, decreased appetite, dry mouth, painful swallowing, diarrhea, constipation and discomfort. metabolic. Nausea and vomiting were experienced in almost all five cases.

The nursing problem is based on Kolcaba's Comfort Theory, a condition of patient discomfort in the physical aspect, and in the five cases relief type comfort was found. Patients 1 and 2 both have poor nutritional status based on the CDC-NCHS 2000 curve. If we look at the patient's condition, in case 1 the child will undergo the second cycle of chemotherapy, the child looks very thin, has no appetite, alopecia, nausea and vomiting, there is a mass or lump

on the left neck but it has shrunk after undergoing chemotherapy, and the child has no complaints of pain when swallowing. Meanwhile, in case 2, the child had just been discovered to have a malignancy and had never received chemotherapy. The child in case 2 had difficulty eating with a large mass covering the right and left mandible with the condition of the mass on the right side being larger and reddish in color and painful when moving the mouth, decreased appetite since 2 months ago and the child had problems with the respiratory system.

Based on the patient's condition in both cases, the factors that trigger nutritional problems that arise are different depending on the child's condition. According to Zimmermann, Ammann, Kuehni, De Geest, and Cignacco (2012), nutritional problems can occur in children who have just been diagnosed with cancer even after receiving therapy. The nutritional imbalance less than the body's needs in case 1 can be caused by side effects from chemotherapy, where the child in case 1 is still undergoing therapy, namely the second cycle of chemotherapy with the chemotherapy drugs Cisplatin and 5-Fluorouracil /5-FU. According to Dupuis et al., (2011 in Feusner, Hastings, & Agrawal, 2015) and Tomlinson and Kline (2010), Cisplatin and 5-Fluorouracil are chemotherapy agents that have the side effects of nausea and vomiting. Cisplatin has severe emetogenic effects and 5-FU has low emetogenic properties. Meanwhile, in case 2, it can be said that the child has just been discovered to have cancer and the child has never received cancer therapy before. This shows that lack of nutrition occurred from the beginning of the appearance of cancer cells and was a result of the development of the cancer cells themselves. Apart from that, children experience pain and shortness of breath due to metastases of cancer cells to the lungs, resulting in increased energy use in the body while nutritional intake is insufficient. This condition is in line with Brinksma et al. (2015), that weight loss can be associated with reduced energy intake, and on the other hand, there is an increase in energy requirements in the body due to the growth of cancer cells/tumor masses which causes disturbances in the body's metabolism.

In cases 3 and 4 the children both had sarcoma-type malignancies, case 3 had rhabdomyosarcoma and case 4 osteosarcoma. In case 3, it is known that the nutritional status is: malnourished based on the CDC-NCHS 2000 curve, but in case 4, the child with an amputation condition has a weight that is very less than the ideal weight, so that in certain cases it is difficult to measure the weight and TB to determine nutritional status. , then LILA can be used as a reference for determining nutritional status (Wahidayat & Sastroasmoro, 2014). Case 4 based on LILA is associated with age, so nutritional status is normal, however the risk factors for nutritional deficiencies are increased metabolic needs due to cancer and decreased appetite. In both cases the children experienced a decrease in appetite and nausea compared to before the assessment. This condition can be caused by the disease or because of the side effects of previous chemotherapy. In line with the results of research by Miller, Jacob & Hockenberry (2011), the most frequent complaints in children undergoing cancer therapy are nausea and decreased appetite. During the treatment period energy needs increase but energy reserves are limited due to insufficient nutritional intake, so that nutritional deficiency conditions can increase (Zimmermann, Ammann, Kuehni, De Geest, & Cignacco, 2012).

Judging from chemotherapy agents, in case 3 the child received vincristine, dactinomycin, and ifosfamide and in case 4 the child received ifosfamide and adriamycin. According to Dupuis et al., (2011 in Feusner, Hastings, & Agrawal, 2015) all of these drugs have the effect of nausea and vomiting, but at different levels. Ifosfamide and adriamycin (doxorubicin) have moderate emetogenic effects, dactinomycin has high emetogenic effects, while vincristine has a minimal risk of causing nausea and vomiting. Casey (2012), explains that the presence

of chemotherapy drugs circulating in the blood vessels can stimulate the Chemoreceptor Trigger Zone (CTZ) in the brain stem for nausea and vomiting activity. Apart from that, nausea and vomiting also occur when administering oral chemotherapy, because it causes irritation of the digestive system.

In case 5, the child was in febrile neutropenia with a body temperature of 38.7°C and ANC: 882 mm<sup>3</sup> (moderate risk of infection), the patient had diarrhea, abdominal pain, decreased appetite since 1 week. Judging from the condition, the problem of nutritional imbalance can occur due to an infection process in the body which results in increased metabolism and use of energy reserves and is accompanied by reduced nutritional intake from outside the body due to discomfort due to diarrhea. This is in line with the mechanism of nutritional disorders in children with cancer presented by Argiles (2005), that nutritional disorders occur through several mechanisms, namely (1) reduced ability of the body to process nutrients due to disruption of glucose, fat and protein metabolism, (2) there is an increase in energy requirements due to tumor growth, infection, surgery and cancer treatment and (3) reduced food intake in the body due to nausea, vomiting, diarrhea, constipation and anorexia.

In the cases encountered, the child's cancer treatment was by administering chemotherapy and dealing with the side effects, however in case 2 the patient had not been able to receive cancer therapy because the patient's condition was not yet possible and in the 5th case, the child received vincristine on the 5th day after febrile neutropenia resolved. The patient in case 1 who received the chemotherapy agents cisplatin and 5-FU, the child experienced nausea and vomiting but the child was given pharmacological therapy ondansetron 4 mg and dexamethasone 2 mg via drip. Ondansetron is a serotonin 5-HT<sub>3</sub> receptor antagonist which functions to prevent nausea and vomiting caused by chemotherapy. According to Cheng, (2017), the joint use of 5-HT<sub>3</sub> receptor antagonists with dexamethasone is effective for preventing acute and delayed chemotherapy-induced nausea and vomiting (CINV) in children receiving highly emetogenic or moderately emetogenic chemotherapy. Collaboration with doctors in administering antiemetics in Kolcaba's Comfort Theory is included in the standard of comfort intervention. This is in accordance with the intervention given in case management 3 and case 4, namely the combination of the drug ondansetron with dexamethasone. Another collaborative intervention carried out is with nutritionists in determining the patient's nutritional intake and total calorie needs. This is carried out in all managed cases. The patient's calorie needs vary depending on the ideal body weight, child's TB and age.

As professional nurses in providing nursing care for children with cancer, nurses can carry out innovative interventions to provide comfort for children (Ebrahimpour & Hoseini, 2018). In these five cases, nurses implemented innovative interventions in the form of comprehensive nutritional management. The intervention begins by providing nutritional management education and assistance in implementing nutritional management. This intervention involves the role of professional nurses as care givers, educators and advocates. In general, the implementation of nutritional management in all five cases was given the same, mothers and patients were given education using nutritional management booklets. Providing education to parents, based on Kolcaba's Comfort Theory, is included in the coaching intervention. The information presented is related to the condition of children with cancer and the process of nutritional disorders, the type of nutritional intake that fits "my dinner plate", the benefits of adequate nutrition during illness, things that parents must pay attention to when providing food, how to feed via the mouth and nasogastric tube (NGT), how to care for the mouth, as well as signs that the child is getting good nutrition.

Providing information to parents regarding nutrition and nutritional management aims to increase parents' understanding, so that they can be involved in care. This is in line with Sueiro, et al., (2019) that establishing parental competence in health practice so that parents are able to be involved in child care is one of the duties and obligations of nurses. Apart from that, the education provided aims to increase parents' knowledge. In accordance with the research results of Thompson, Silliman, and Clifford (2013) after providing nutrition management education, there was a significant increase in the average knowledge score of parents and there was a significant relationship between knowledge and skills related to managing the side effects of chemotherapy which resulted in nutritional problems. in children.

Next, the nurse implements nutritional management which is included in the standard of comfort intervention by providing assistance in preparing to give the child food, such as encouraging the mother to open the plastic food cover and transfer the food to the child's dinner plate, preparing a drink or fruit juice in a small glass. Using a children's dining set can provide a comfortable impression for children (Prevost & Grach, 2012). Children are also advised to carry out oral care before eating and after eating. Oral care (brushing your teeth and rinsing your mouth) can maintain oral health and prevent bacterial colonization and reduce the duration and severity of mucositis. In addition, oral care can reduce nausea and increase the feeling of comfort in the oral cavity (Bowden & Greenberg, 2010; Chaveli-Lopez & Bagan-Sebastian, 2016; Tomlinson & Kline, 2010). In the five cases, on average, children carried out oral care by gargling 2-3 times a day. In cases 1, 3 and 4 the children gargled independently with non-alcoholic mouthwash 0.2% chlorhexidine. Meanwhile, in case 2, oral care was assisted by using gauze and non-alcoholic mouthwash 0.2% chlorhexidine, because the child could not rinse his mouth independently. In case 5 the child gargled using 0.9% saline. This is in line with Qutob, Allen, Gue, Revesz, Logan, and Keefe (2013), that the liquid used to gargle is a liquid that does not contain alcohol. Gargling can use non-alcoholic mouthwash 0.1% chlorhexidine, 0.9% saline or sodium bicarbonate (Bowden & Greenberg, 2010).

Nurses can also help facilitate the child's comfort through comfort food for the soul interventions, such as making the room comfortable for the child by covering the slings, mother/father accompanying the child to eat and feeding the child if the child is not yet able to eat independently. In case 2, because the child received 8 x 275 ml enteral nutrition (F100) via a nasogastric tube (NGT), the implementation of nutritional management in child S was slightly different compared to children in cases 1, 3, 4, and 5. In case 2, nutritional management was focused on how to provide nutrition through a NGT because the patient's mother does not understand how to give milk through a NGT. In nutritional management, parents are given education regarding the benefits of providing nutrition, indications for providing nutrition via NGT, how to administer it and complications that can occur.

According to Stewart (2014), enteral nutrition is an option for providing nutrition for patients with malnutrition due to critical illness, chronic illness, sepsis, surgery, and those who cannot tolerate oral nutrition. This method can help restore intestinal motility and the risk of infection is lower than providing parenteral nutrition. However, improper administration can increase the occurrence of complications such as aspiration, diarrhea, constipation, vomiting and abdominal distension. Therefore, providing education on how to provide enteral nutrition via a nasogastric tube (NGT) is very important. To prevent complications and ensure that nutrition is received properly, the nurse emphasizes ensuring the position of An's head. S is elevated to 30-45 degrees when giving milk, change the feeding burette every time you give



milk and keep your hands clean. After being given education, the patient's mother understood the explanation given and when accompanied on day 2 the mother was able to do it well.

The five cases of management of children with cancer after being given nursing care using the Kolcaba Comfort Theory approach, show different developments, especially in the problem of nutritional imbalances that are less than the body's needs. The child's comfort type in cases 1, 2, 3, 4 and 5 in the physical aspect of the problem of nutritional imbalance being less than the body's needs is in the ease comfort type. The ease comfort type is defined as a condition where there is no specific feeling of discomfort (Kolcaba & DiMarco, 2005). This condition shows improvement at the beginning of the assessment of the child's comfort type in the relief type. After being given nursing care with comfort interventions (standard comfort, coaching and comfort food for the soul), children do not feel discomfort such as nausea, vomiting, abdominal pain due to diarrhea and constipation, or it can be said that giving nutrition orally or via NGT can be tolerated well.

The nursing problem of nutritional imbalance less than the body's needs in cases 1, 2, and 3 has not been fully resolved because during 5 days of treatment it has not been able to improve the child's nutritional status to normal, but during treatment it shows improvements in the child's nutritional condition such as increased appetite, variety of food according to "my dinner plate", reduced complaints of nausea and vomiting, no incidence of mucositis. In case 4, the problem of the risk of nutritional imbalance being less than the body's needs still has the potential to occur, because when the child goes home on day 5 there is still vomiting but the frequency has decreased from before and the appetite is not yet adequate. In case 5, the problem of risk of nutritional imbalance less than body requirements did not occur, as indicated by the child's appetite improving, the child's nutritional status good and diarrhea having been resolved, the child having no fever and the Hb, leukocyte, neutrophil and ANC values showing improvement. In cases 1, 3, 4, and 5 children were allowed to be outpatient after 5 days of treatment.

In case 2, for 6 days, nursing care was provided using the Kolcaba Comfort Theory approach, for children's nutritional problems in relief and ease. In the relief condition, the child still experiences breathing problems, namely the production of a lot of secretions, which interferes with the patient's airway. Apart from that, the mass in the right mandible is still large and reddish in color, which also makes the child uncomfortable. This condition indicates that there is still an active infection process and tumor mass growth, resulting in increased energy use. The child's nutritional status is poor nutrition, indicated by a body weight below the ideal body weight, although there is an increase, the Hb and albumin values are still below normal. The patient is also in the ease comfort type, where child S can accept/tolerate nutrition per NGT F100: 8x200 ml and there is no vomiting. Child S's condition shows that the problem of nutritional imbalance less than the body's needs has not been fully resolved even though all the programmed nutritional intake has been provided through NGT.

We can see in case 2, there is a mass in the mandible that is still large even though the child has been given antibiotics to treat the infection that occurred. According to Argiles (2005) in cancer sufferers there is an increase in the body's need and use of energy due to tumor growth and infection processes in the body. So there is a difference in the development of the condition of patients in case 1 and case 2 with the same type of cancer (nasopharyngeal carcinoma), because in case 2 the patient was at an early stage of cancer diagnosis and had never received cancer therapy, while in case 1 the child had received chemotherapy. Therefore, the patient in case 2 continued to undergo treatment after the evaluation results on

day 6, while in cases 1, 3, 4 and 5 were allowed outpatient treatment because the patient's condition had improved.

## **CONCLUSION**

The application of Kolcaba's Comfort Theory in child care can optimize the nursing care provided by nurses, because this theory directs nurses to be able to provide care according to the patient's comfort needs through the concepts of physical, psychospiritual, sociocultural and environmental comfort and facilitates nurses in providing innovative interventions. In this way, patient comfort can be improved holistically, patient trust in nurses increases, nutritional intake is fulfilled more optimally, and conditions improve more quickly.

## **REFERENCES**

- Argiles, J. M. (2005). Cancer-associated malnutrition. *European Journal of Oncology Nursing*, 9, S39–S50. doi:10.1016/j.ejon.2005.09.006.
- Brinksma, A., Roodbol, P.F., Sulkers, E., Hooimeijer, H.L., Sauer, P.J.J., van Sonderen, E., . . . Tissing, W. J. E. (2015). Weight and height in children newly diagnosed with cancer. *Pediatric Blood & Cancer*, 62(2), 269-273. doi:10.1002/pbc.25301.
- Bowden, V.R., & Greenberg, C.S. (2010). *Children and their families: The continuum of care* (2nd Ed). Philadelphia: Wolters Kluwer Health Lippincott Williams&Wilkins.
- Chaveli-Lopez, B., & Bagán-Sebastian, J. V. (2016). Treatment of oral mucositis due to chemotherapy. *Journal of Clinical and Experimental Dentistry*, 8(2), e201-9. <http://doi.org/10.4317/jced.52917>.
- Cheng, K.K.F. (2017). Prevention of gastrointestinal side-effects in pediatric oncology. *Current Opinion in Supportive and Palliative Care*, 11(2), 120–124. doi:10.1097/spc.0000000000000264.
- Ettinger, D. S., & Lin, T. L. (2009). *Supportive care in cancer therapy*. USA: Humana Press.
- Ebrahimpour, F., & Hoseini, A.S. (2018). Suggesting a practical theory to oncology nurses: Case report of a child in discomfort. *Journal of Palliative Care*, 33(4), 194-196. doi:10.1177/0825859718763645.
- Farrell, C., Brearley, S. G., Pilling, M., & Molassiotis, A. (2013). The impact of chemotherapy-related nausea on patients' nutritional status, psychological distress and quality of life. *Supportive Care in Cancer*, 21(1), 59–66. doi:10.1007/s00520-012-1493-9.
- Feusner, J. H., Hastings, C. A., & Agrawal, A. K. (2015). *Supportive care in pediatric oncology: a practical evidence-based approach*. USA: Springer. doi:10.1007/978-3-662-44317-0.
- Gaynor, E. P. T., & Sullivan, P. B. (2015). Nutritional status and nutritional management in children with cancer: Table 1. *Archives of Disease in Childhood*, 100(12), 1169–1172. doi:10.1136/archdischild-2014-306941.
- Hockenberry, M. J., & Rodger, C. C. (2015). *Pediatric psycho-oncology: The quick reference on the psychosocial dimensions of cancer symptom management*, second edition. L. Wiener, M. Pao, AE Kazak, MJ Kupst, AF Patenaude, & RJ Arceci (Eds.). New York: Oxford University Press.

- Hockenberry, M. J., & Wilson, D. (2015). *Wong's nursing care of infants and children* (10th ed.). St. Louis, Missouri: Elsevier Mosby.  
<http://doi.org/10.1017/CBO9781107415324.004>
- Indonesian Ministry of Health. (2014). Guidelines for balanced nutrition. Downloaded on January 1 2019, at <http://gizi.depkes.go.id/download/pedoman%20gizi/pgs%20ok.pdf>
- Indonesian Ministry of Health. (2016). *Pocket book on early discovery of cancer in children*. Jakarta: Directorate General of Prevention and Control of Non-Communicable Diseases.
- Kolcaba, K., & DiMarco, M. A. (2005). Comfort theory and its application to pediatric nursing. *Pediatric Nursing*, 31(3), 187-194.
- Kyle, T. & Carman, S. (2017). *Essentials of pediatric nursing*. 3rd edition. Philadelphia: Wolters Kluwer.
- Leandro, T., da Silva, VM, Lopes, MV d. O., Guedes, NG, Nunes, MM, de Sousa, TM, & Araujo, MV (2018). Impaired comfort in children and adolescents with cancer. *Revista Brasileira De Enfermagem*, 71(3), 934-941. doi:<http://remote-lib.ui.ac.id:2090/10.1590/0034-7167-2017-0050>.
- Miller, E., Jacob, E., & Hockenberry, M. J. (2011). Nausea, pain, fatigue, and multiple symptoms in hospitalized children with cancer. *Oncology Nursing Forum*, 38(5), E382–E393. doi:10.1188/11.onf.e382-e393.
- Murshid, EZ, Azizalrahman, TA, & AlJohar, AJ (2016). Oral mucositis in leukemic Saudi children following chemotherapy. *The Saudi Journal for Dental Research*, 8(1–2), 79–85. <http://doi.org/10.1016/j.sjdr.2016.10.004>.
- Prevost, V., & grach, M. C. (2012). Nutritional support and quality of life in cancer patients undergoing palliative care. *European Journal of Cancer Care*, 21(5), 581–590. doi:10.1111/j.1365-2354.2012.01363.x
- Qutob, A.F., Allen, G., Gue, S., Revesz, T., Logan, R.M., & Keefe, D. (2013). Implementation of a hospital oral care protocol and recording of oral mucositis in children receiving cancer treatment: A retrospective and a prospective study. *Supportive Care in Cancer*, 21(4), 1113–1120. <http://doi.org/10.1007/s00520-012-1633-2>
- Stewart, M. L. (2014). Interruptions in enteral nutrition delivery in critically ill patients and recommendations for clinical practice. *Critical Care Nurse*, 34(4), 14–22. doi:10.4037/ccn2014243.
- Sueiro, IM, Goes, FGB, Silva, LF, Moraes, JR (2019). Nursing care towards feeding children undergoing chemotherapy treatment: colliere's contributions. *Rev Fund Care Online*. 2019.11(n.esp):351-357. DOI: <http://dx.doi.org/10.9789/2175-5361.2019.v11i2.351-357>.
- Thompson, J., Silliman, K., & Clifford, D. E. (2013). Impact of an early education multimedia intervention in managing nutrition-related chemotherapy side effects: a pilot study. *Springer Plus*, 2(1), 179. doi:10.1186/2193-1801-2-179
- Tomlinson, D., & Kline, N. E. (2010). *Pediatric Oncology Nursing: Advanced Clinical Handbook* (2nd ed). New York: Springer.

- Valera, M.-C., Noirrit-Esclassan, E., Pasquet, M., & Vaysse, F. (2015). Oral complications and dental care in children with acute lymphoblastic leukemia. *Journal of Oral Pathology & Medicine*, 44(7), 483–489. <http://doi.org/10.1111/jop.12266>
- Wahidayat, I., & Sastroasmoro, S. (2014). *Clinical examination of infants and children*. Jakarta: Sagung Seto. ISBN: 978-602-271031-8.
- Zimmermann, K., Ammann, R.A., Kuehni, C.E., De Geest, S., & Cignacco, E. (2013). Malnutrition in pediatric patients with cancer at diagnosis and throughout therapy: A multicenter cohort study. *Pediatric Blood & Cancer*, 60(4), 642–649. doi:10.1002/pbc.24409.