Individualised Nursing Care Improves Symptom Control and Nutritional Tolerance in Women with Stage III Ovarian Cancer Undergoing Chemotherapy

Wahyu[1], Machmudah[1], Sri Rejeki[1]
[1]Master's Program in Nursing, Universitas Muhammadiyah Semarang, Semarang, Indonesia
Correspondence: **Wahyu**: Jl. Anoa 1, Palu, Indonesia; wahyupraditya99@yahoo.co.id

ABSTRACT
Ovarian cancer is a leading cause of cancer-related mortality among women and is frequently diagnosed at an advanced stage. Management of stage III disease typically requires multimodal treatment, including surgery and chemotherapy, both of which contribute to a substantial symptom burden and increased supportive care needs. As a result, comprehensive nursing care becomes essential to address the complex physical and psychosocial challenges experienced during active treatment. This case report aimed to describe the implementation of the nursing process in two women with stage III ovarian cancer undergoing active treatment in a referral hospital in Central Sulawesi, Indonesia. Data were collected through semi-structured interviews, direct clinical observation, and documentation review using the Indonesian Nursing Diagnosis Standards framework. Both patients presented with nutritional deficits and nausea as primary nursing diagnoses. Additional problems identified in the first patient included acute pain, sleep disturbance, activity intolerance, and ineffective peripheral perfusion, whereas the second patient experienced a risk of infection related to colostomy and disturbed body image. Nursing interventions focused on symptom management, nutritional support, pain control, infection prevention, and psychosocial care. Evaluation demonstrated improvements in symptom control, increased tolerance to nutritional intake, and the absence of infection throughout hospitalization. In conclusion, individualized and holistic nursing care plays a critical role in enhancing clinical outcomes and patient comfort during active treatment for advanced ovarian cancer.
Keywords: chemotherapy; nutritional deficit; nursing process; ovarian cancer; supportive care; symptom management

INTRODUCTION
Cancer continues to represent a significant global health challenge, with the disease ranking as the second leading cause of mortality worldwide, surpassed only by cardiovascular diseases. Despite substantial advances in diagnostic modalities, therapeutic innovations, and public health initiatives, the global burden of cancer remains high and is projected to increase in the coming decades due to population ageing, lifestyle transitions, and persistent disparities in access to healthcare services. Among gynaecological malignancies, ovarian cancer stands out as one of the most lethal. Its high mortality rate is largely attributable to the absence of specific early symptoms, the lack of effective population-based screening tools, and the tendency for the disease to progress silently until reaching an advanced stage. Consequently, ovarian cancer is frequently designated a "silent killer," as the majority of patients present with stage III or IV disease, at which point prognoses are typically poor and therapeutic options become more complex and less effective [1,2].

Globally, ovarian cancer is the eighth most prevalent cancer among women, with an estimated incidence exceeding 300,000 new cases and approximately 200,000 deaths annually [2]. These figures underscore the aggressive nature of the disease and the urgent need for improved strategies in early detection, treatment, and supportive care. In Indonesia, the epidemiological pattern mirrors global trends, with a steady rise in ovarian cancer incidence over recent years. Most cases are diagnosed at advanced stages, particularly among women aged over 50 years, reflecting both biological vulnerability and systemic challenges in early recognition and timely referral [3]. At the regional level, referral hospitals in Central Sulawesi report analogous patterns, where patients frequently arrive with extensive disease burden requiring complex, multidisciplinary, and often prolonged treatment regimens. These conditions place considerable strain not only on healthcare systems but also on patients and their families, who must navigate the physical, emotional, and financial consequences of advanced cancer care.

The management of advanced ovarian cancer typically involves a combination of cytoreductive surgery and systemic chemotherapy. Optimal cytoreduction remains a cornerstone of treatment, yet chemotherapy plays an equally critical role in controlling tumour progression, reducing residual disease, and improving survival outcomes. However, chemotherapy is associated with a wide range of adverse effects, including nausea, vomiting, fatigue, pain, anorexia, and overall nutritional decline. These side effects can significantly impair patients' functional status, psychological well-being, and overall quality of life [4,5]. The cumulative burden of symptoms often leads to decreased treatment adherence, heightened emotional distress, and increased dependency on caregivers. These challenges highlight the indispensable role of nursing care in providing holistic support that addresses not only the physiological consequences of treatment but also the psychosocial dimensions of living with advanced cancer.

A growing body of research has demonstrated that the implementation of a structured nursing process—encompassing comprehensive assessment, accurate diagnosis, evidence-based intervention, and systematic evaluation—has the potential to reduce symptom burden, improve nutritional status, enhance coping mechanisms, and ultimately elevate quality of life among patients undergoing chemotherapy [6,7]. Nursing interventions grounded in the nursing process framework have been shown to facilitate early identification of complications, strengthen patient engagement in self-care, and promote continuity of care across treatment phases. Nevertheless, extant literature has focused predominantly on general oncology populations or on specific symptom clusters, with limited attention given to in-depth clinical descriptions of nursing care implementation in advanced ovarian cancer patients. Moreover, studies conducted within Indonesian healthcare settings remain scarce, despite the unique cultural, structural, and resource-related factors that shape patient experiences and influence the delivery of nursing care.

This gap indicates the necessity for scientifically substantiated case reports that exemplify practical nursing applications through a systematic and evidence-based framework. Case reports of this nature are imperative for enriching clinical knowledge, strengthening professional nursing practice, and providing context-specific insights that may inform future guidelines, training, and policy development. They also serve as valuable educational tools for nurses, enabling the translation of theoretical concepts into real-world clinical decision-making. In light of the aforementioned background, the need for a detailed case study report has been clearly established. Therefore, this study aims to describe the implementation of the nursing process in two women with stage III ovarian cancer undergoing active treatment in a referral hospital, with particular emphasis on the assessment of symptoms, formulation of nursing diagnoses, delivery of targeted interventions, and evaluation of patient outcomes.

METHODS

This study employed a descriptive case report design using a nursing process approach. This design was selected to obtain an in-depth understanding of the application of nursing care in patients with advanced ovarian cancer during active treatment. The study was conducted in the oncology treatment unit of Undata Hospital, Central Sulawesi Province. Data collection was carried out over two separate periods: December 10–16, 2025 for the first patient and December 19–24, 2025 for the second patient.

The subjects in this case study were two female patients diagnosed with stage III ovarian cancer who were undergoing or had recently undergone chemotherapy. Both patients were hospitalized in a referral center in Central Sulawesi during the December 2025 period. Subject selection was based on inclusion criteria, namely: patients diagnosed with advanced ovarian cancer, fully conscious (compos mentis), and willing to participate in the case study.

Data were collected using three techniques: 1) interviews, to obtain subjective information from patients and families regarding symptoms, experiences, and responses to treatment; 2) observation, to assess clinical conditions, responses to nursing interventions, and changes occurring during the treatment period; and 3) documentation review, involving examination of nursing records and medical records using a structured nursing process format. The instruments used in this study were developed according to the nursing process framework, which includes assessment, formulation of nursing diagnoses, planning of interventions, implementation, and evaluation. All components referred to the Indonesian Nursing Diagnosis Standards (SDKI). Data analysis was conducted narratively and comparatively by examining and contrasting the assessment findings, nursing diagnoses, interventions, and evaluation outcomes of both patients. The results were interpreted and linked to theoretical concepts and previous research to identify congruence and discrepancies between nursing practice and established evidence-based guidelines.

RESULTS

This study involved two female patients with a medical diagnosis of stage III ovarian cancer undergoing chemotherapy. Both patients were treated in the oncology treatment room at a referral hospital in Central Sulawesi Province. The general characteristics of the patients showed similarities in medical diagnosis and disease stage, but there were differences in disease history and response to therapy. The first patient, aged 40, was diagnosed with ovarian cancer about two months before treatment, with weak general conditions and significant abdominal pain accompanied by ascites. The second patient was 45 years old, had a longer history of ovarian cancer and had undergone several previous surgeries, including a colostomy, with relatively better general conditions and being able to function independently (Table 1).

Table 1. Characteristics of patiens

Identity	Subject I	Subject II
Name	Mrs. J	Mrs. HA
Gender	Female	Female
Usia	40 years old	45 years old
Marital status	Married	Married
Jobs	Housewives	Housewives
Final education	High school	High school
Medical diagnosis	Stage III ovarian cancer	Stage III ovarian cancer
Identity of the person in charge	Mr. P/ 41 years old/ husband/ farmer	Miss. ID/ 26 years old/ daughter/ student

Table 2. Nursing diagnosis in study subjects

No.	Subject I		Subject II	
	Date found	Nursing diagnosis	Date found	Nursing diagnosis
1.	13/12/2025	Nutritional deficit related to lack of food intake (D.0019) Subjective data: • Client said appetite decreases and feels nausea and vomiting • Client said fast satiety when eating Objective data: • The client only eat 2 spoons of the meal portion that has been provided • General condition: weak • Lips: dry • Conjunctive: anemia	22/12/2025	Nutritional deficit related to lack of food intake (D.0019) Subjective data: • Client said appetite decreases and nausea vomiting • Client said fast satiety when eating Objective data: • The client only consumes 1/4 of the meal that has been provided • General condition: okay • Lips: dry
2.	13/12/2025	Nausea related to effects of pharmacological agents (D.0076) Subjective data: • Client complain of nausea • Client feels like vomiting • Client complains of lack of appetite Objective data: • Client only eat 2 spoons from the meal portion that has been provided • Client look pale	22/12/2025	Nausea related to effects of pharmacological agents (D.0076) Subjective data: • Client complain of nausea • Client feels like vomiting • Client complains of lack of appetite Objective data: • Client only eat a portion of the meal portion that has been provided • Client look pale
3.	13/12/2025	Peripheral perfusion is ineffective related to decreased hemoglobin concentration (D.009) Subjective data: • Client complain of dizziness and freaking out • Client complain of nausea Objective data: • CRT >2 seconds • Anemic client conjunctiva • Client reports cold sensation in the acral areas • Hb : 13.3 g/dl	22/12/2025	Body image disorders releted to effects of action/treatment (D.0083) Subjective data: • Client said he is embarrassed because his hair has started to fall short • Client said she's embarrassed because her skin is dull Objective data: • The client is observed consistently wearing headgear. • The client is observed consistently wearing long-sleeved shirts

No.	Subject I		Subject II	
	Date found	Nursing diagnosis	Date found	Nursing diagnosis
4.	13/12/2025	Acute pain rlated to physiological distressing agents (D.0077) Subjective data: • Client complains of pain P : If you change positions Q : Like being cut down by a sharp object R : the whole space of the stomach S: 6 T : Continuous Objective data: • Client is seen grimacing in pain • Clients look restless • Client is seen whining in pain	22/12/2025	Risk of infection related to effects of invasive procedures (D.0142) Subjective data: - Objective data: • Clientis seen using colostomy bags • On the client's abdomen there is a post op colostomy wound
5.	13/12/2025	Sleep pattern disturbances related to environmental barriers (D.0055) Subjective data: • Client complains of difficulty sleeping • Client complains of dissatisfaction while sleeping • Client complains of insufficient rest Objective data: • Client looks weak		
6.	13/12/2025	Activity intolerance related to weakness (D.0056) Subjective data: • Client complains of weakness • Client said he can't afford to sit alone without the help of others Objective data: • Clients look weak • Client just lying on the bed • Client's activities are assisted by family		

Based on the results of the assessment and data analysis using the nursing process approach, several main nursing diagnoses were obtained. The diagnosis that appeared in both patients was nutritional deficit related to lack of food intake and nausea related to the effects of pharmacological agents (chemotherapy). In addition, there is a specific nursing diagnosis for each patient. In the first patient, additional nursing diagnoses in the form of acute pain, sleep pattern disorders, activity intolerance, and peripheral perfusion were found to be ineffective. Meanwhile, in the second patient, a diagnosis of infection risk related to an invasive procedure in the form of a colostomy was found (Table 2).

The administration of therapy for each client was tailored to their respective clinical conditions and individual needs. In general, the therapeutic approach aimed to inhibit the progression of cancer cells through chemotherapy while simultaneously managing comorbidities that emerged during the treatment process. Both clients received a chemotherapy regimen consisting of Bleomycin, Etoposide, and Carboplatin, administered intravenously as part of the standard management protocol for advanced ovarian cancer. Although both clients underwent the same chemotherapy regimen, differences were noted in the provision of supportive therapy. In Subject I, additional analgesic treatment; Morphine combined with Levica 0.1% was administered to address more severe pain symptoms. The need for supplementary analgesia indicated a greater requirement for pain control in Subject I compared to Subject II. Consequently, supportive therapy was individualized based on each client's clinical response and evolving condition, ensuring that therapeutic management remained patient-centered and responsive to specific needs (Table 3).

Table 3. Implementation of therapy

Subject I	Subject II
Morphine mixed with Levica 0.1% 3x10cc Chemotherapy: 1. Bleomycin 3x15mg (IV) drip 2. Etoposid 3x100mg (IV) drip 3. Carboplatin 1x200 mg (IV) drip	Chemotherapy: 1. Bleomycin 3x15mg (IV) drip 2. Etoposid 3x100mg (IV) drip 3. Carboplatin 1x200 mg (IV) drip

Table 4. Nursing actions

No	Subject 1			Subject 2		
	Date/time	Nursing measures	Evaluation	Date/time	Nursing measures	Evaluation
1	13/12/2025 – 08.00 WITA	Identify location, characteristics, duration, scale, quality, and intensity of pain	P: pain when changing position; Q: sharp, like being cut by an object; R: entire abdominal area; S: 6; T: continuous	22/12/2025 – 08.17 WITA	Identify factors causing nausea	Client reports bitter-tasting saliva
2	08.15 WITA	Teach deep-breathing relaxation techniques	Client practices breathing relaxation	08.32 WITA	Identify nutritional status	Client eats small but frequent portions
3	08.20 WITA	Identify nutritional status	Client eats small but frequent portions	09.02 WITA	Identify preferred foods	Client prefers sweet foods
4	08.23 WITA	Identify factors causing nausea	Client reports bitter-tasting saliva	09.19 WITA	Encourage small, frequent meals	Client agrees to follow advice
5	08.26 WITA	Identify preferred foods	Client reports no food preferences	09.20 WITA	Monitor nutrient and calorie intake	Client consumes only a small portion of provided meals
6	08.28 WITA	Encourage small, frequent meals	Client nods in agreement	09.32 WITA	Identify patient's abilities	Client reports being accustomed to performing own activities
7	09.02 WITA	Check peripheral circulation	CRT < 2 seconds	09.35 WITA	Encourage expression of feelings	Client shares home habits and hobbies
8	09.12 WITA	Identify sleep patterns	Client sleeps 3–4 hours/day	10.01 WITA	Encourage family involvement	Client reports son frequently assists
9	09.15 WITA	Identify causes of insomnia	Client reports difficulty sleeping due to unfamiliar, crowded environment	10.15 WITA	Perform hand hygiene before patient contact	Infection prevention
10	09.20 WITA	Identify activity ability	Client only able to lie in bed	10.21 WITA	Monitor for signs of local/systemic infection	No signs of infection observed

Table 5. Nursing actions

No	Subject 1			Subject 2		
	Date/time	Nursing measures	Evaluation	Date/time	Nursing measures	Evaluation
1	15/12/2025 – 08.00 WITA	Identify location, characteristics, duration, scale, quality, and intensity of pain	P: pain when changing position; Q: sharp, like being cut; R: entire abdomen; S: 6; T: continuous	23/12/2025 – 09.05 WITA	Identify factors causing nausea	Client reports bitter-tasting saliva
2	08.20 WITA	Instruct family to apply warm compress to painful area	Client follows recommendations	09.10 WITA	Identify nutritional status	Client reports meals are insufficient to finish
3	08.25 WITA	Identify sleep patterns	Client reports minimal sleep	09.14 WITA	Encourage small, frequent meals	Client agrees to follow instructions
4	08.30 WITA	Explain importance of adequate sleep during illness	Client agrees to try sleeping as recommended	09.26 WITA	Monitor nutrient and calorie intake	Client consumes half of provided portion
5	09.10 WITA	Monitor nutrient and calorie intake	Client does not consume provided meals	10.00 WITA	Encourage family involvement	Client reports children assist with activities and toileting
6	09.20 WITA	Recommend small, frequent meals	Client agrees to try recommendations	10.15 WITA	Monitor for signs of infection	No signs of infection observed
7	09.25 WITA	Monitor for signs of infection in extremities	No heat, pain, swelling, or redness	10.30 WITA	Perform hand hygiene after patient contact	Infection prevention

Table 6. Nursing actions

No	Subject 1			Subject 2		
	Date/time	Nursing measures	Evaluation	Date/time	Nursing measures	Evaluation
1	16/12/2025 – 08.00 WITA	Identify location, characteristics, duration, scale, quality, and intensity of pain	P: pain when changing positions; Q: sharp, like being pierced; R: entire abdomen; S: 4; T: intermittent	08.15 WITA	Identify factors causing nausea	Client reports nausea has decreased
2	09.10 WITA	Identify factors causing nausea	Client reports reduced nausea	08.20 WITA	Identify nutritional status	Client reports improved appetite
3	09.14 WITA	Check peripheral circulation	CRT < 2 seconds	08.23 WITA	Encourage small, frequent meals	Client nods in understanding
4	09.22 WITA	Identify non-verbal pain responses	Facial expression appears more relaxed	08.25 WITA	Monitor nutrient and calorie intake	Client consumes half of provided portion
5	09.17 WITA	Encourage small, frequent meals	Client reports improved appetite	08.30 WITA	Encourage family involvement	Client reports assistance from son
6	09.22 WITA	Monitor nutrient and calorie intake	Client reports having just eaten	08.33 WITA	Monitor for signs of infection	No signs of infection observed
7	19.39 WITA	Identify activity ability	Client remains lying in bed	—	—	—
8	10.00 WITA	Identify sleep patterns	Client reports improved nighttime sleep	—	—	—

The implementation of nursing care for both clients was carried out systematically based on the nursing problems that emerged during the treatment period. Interventions were directed toward managing pain, addressing nutritional disturbances, reducing nausea, improving sleep quality, preventing infection, and monitoring the clients' functional activity levels. Each nursing action began with a comprehensive assessment, followed by the delivery of appropriate interventions and an evaluation of the clients' responses to the care provided. In the domain of pain management, nurses assessed the location, characteristics, duration, scale, quality, and intensity of pain, and provided education on relaxation techniques and the use of warm compresses as non-pharmacological strategies. Nutritional status was monitored through an evaluation of dietary patterns, caloric intake, and food preferences, particularly in relation to complaints of nausea and reduced appetite during therapy. Additional interventions included monitoring for signs and symptoms of infection, assessing peripheral circulation, evaluating sleep patterns, and providing education on the importance of adequate rest and family involvement in the treatment process. Evaluation of the interventions demonstrated gradual improvements in both clients, including reductions in pain intensity, better sleep patterns, increased tolerance to food intake, and the absence of infection throughout the observation period. These findings indicate that the nursing interventions implemented had a positive impact on the clients' overall clinical condition (Table 4, Table 5 and Table 6).

DISCUSSION

The findings of this case report indicate that patients with advanced ovarian cancer undergoing chemotherapy commonly experience nutritional deficits and nausea as primary clinical problems. These results align with previous studies showing that gastrointestinal disturbances; particularly nausea, vomiting, and reduced nutritional intake constitute some of the most prominent and persistent symptoms in this patient population [8,9]. Earlier research has similarly documented that loss of appetite, fatigue, constipation, sleep disturbances, and chemotherapy-induced nausea and vomiting (CINV) frequently emerge as dominant symptom clusters among women receiving chemotherapy for ovarian cancer [10,11]. Such symptoms not only impair physical functioning but also contribute to emotional distress, reduced treatment adherence, and diminished quality of life.

The nutritional deficits observed in both patients manifested through decreased appetite, early satiety, and an inability to consume the provided meal portions. Clinically, these conditions may exacerbate metabolic imbalance, weaken immune function, and slow the recovery process. In advanced cancer, systemic inflammation and elevated pro-inflammatory cytokines contribute to anorexia and cancer-related cachexia, making nutritional disturbances both symptomatic and pathophysiological in nature [8]. Consequently, early identification of nutritional problems and the provision of tailored nutritional support are essential components of oncology nursing care. This is supported by Larsen et al. (2022), who emphasized that meeting basic physiological needs; including adequate nutrition is a foundational element of nursing care for individuals with chronic and life-limiting illnesses [12].

The variation in additional symptoms between the two patients reflects the complexity and individuality of cancer experiences. Symptom clusters such as pain, fatigue, and sleep disturbances often occur simultaneously, yet their intensity and impact may differ depending on disease progression, treatment regimen, psychological resilience, and social support systems [13,14]. Nursing interventions that prioritize nutritional support, symptom management, and psychosocial care have been shown to reduce symptom severity and enhance patient comfort. These findings reinforce the importance of adopting a holistic and individualized approach in oncology nursing practice, where interventions are tailored to each patient's evolving needs.

The nausea experienced by both patients is closely associated with the pharmacological effects of chemotherapy agents, which stimulate the vomiting center and activate neurotransmitter pathways such as serotonin and dopamine. Nursing interventions—including encouraging small but frequent meals, providing education on dietary modifications, and collaborating with physicians in optimizing antiemetic therapy—were effective in reducing nausea intensity, although they did not completely eliminate symptoms. These findings are consistent with previous research demonstrating that integrated nursing strategies can mitigate chemotherapy side effects and improve patient comfort [7]. A multimodal approach that combines pharmacological and non-pharmacological interventions remains essential for managing persistent nausea.

The acute pain experienced by the first patient may be attributed to clinical conditions such as ascites and abdominal masses, which exert pressure and cause tissue infiltration. Pain is a common and often debilitating symptom in advanced ovarian cancer due to tumor progression and peritoneal involvement [15]. The use of non-pharmacological interventions, such as relaxation techniques, contributed to reducing pain intensity and improving patient comfort. These findings support Miller's (2023) conclusion that non-pharmacological strategies are effective adjuncts in comprehensive pain management for ovarian cancer patients [16]. Integrating pain management into individualized care plans is therefore crucial for enhancing quality of life.

Sleep disturbances and activity intolerance in the first patient further illustrate the multidimensional impact of advanced cancer and the hospital environment. Xu et al. (2023) reported that chronic illness and unfamiliar hospital settings can significantly impair sleep quality and reduce activity tolerance [17]. Studies on quality of life during chemotherapy also highlight the importance of monitoring patient-reported outcomes (PROs) to capture dynamic changes in symptoms and care needs [18]. A step-care approach, supported by regular monitoring, enables timely adjustment of intervention intensity according to the patient's clinical trajectory [19,20]. These findings underscore that continuous evaluation is an integral component of evidence-based nursing care.

In the second patient, who had a colostomy, the need for ongoing monitoring and education was particularly evident due to the increased risk of infection associated with stoma care. This observation is consistent with earlier research emphasizing the critical role of nurses in preventing complications through early intervention and patient education [21]. Furthermore, the health-related social needs framework highlights that factors such as food security, housing stability, transportation, and safety influence access to therapy and clinical outcomes, indicating that nursing interventions must address both clinical and social determinants of health [22]. Thus, psychological and social domains contribute as significantly as physical factors in determining patient quality of life [23].

Overall, the findings of this study confirm that variations in patient conditions and responses require comprehensively tailored interventions that address physical, psychological, and social dimensions. A holistic approach supported by continuous evaluation is essential for improving patient outcomes during chemotherapy. The needs of cancer patients vary widely depending on cancer type and stage, age, comorbidities, functional status, and social context; therefore, rehabilitation and supportive care programs must be individualized and aligned with each phase of therapy [24,25]. This case report demonstrates that effective nursing care requires the integration of these multidimensional components to ensure optimal outcomes during active cancer treatment.

This case report is subject to several limitations. First, the small number of subjects limits the generalizability of the findings. Second, the study was conducted in a single healthcare facility, which may not represent variations in nursing practice across different institutions or regions. Third, the relatively short observation period may not capture long-term outcomes or delayed treatment effects. Future research should employ larger sample sizes, multi-center settings, and longitudinal designs to strengthen the evidence base for oncology nursing practice.

CONCLUSION

This case report underscores the pivotal role of individualized, holistic nursing care in managing patients with advanced ovarian cancer during active treatment. The implementation of a systematic nursing process led to a significant reduction in symptom severity, particularly nausea and pain, and contributed to the prevention of complications. The observed variations in patient responses underscore the necessity for customized nursing interventions that address the physical, psychological, and social dimensions of health.

Ethical consideration, competing interest and source of funding

- This case report was conducted in accordance with established ethical principles, including the maintenance of confidentiality, the assurance of anonymity, and the facilitation of voluntary participation. Written informed consent was obtained from both patients, and permission to conduct the study was granted by the hospital management.
- No conflict of interest
- Independently sourced costs from researchers.

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