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## CASE REPORT

### Wernicke–Korsakoff-encephalopathy: A case study<sup>☆</sup>

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#### KEYWORDS

Patient care planning;  
Neurology;  
Wernicke  
encephalopathy;  
Caregivers

#### Abstract

**Aim:** To develop conceptual and operational definitions to define characteristics and related factors (individualised nursing care plan) for the process of 50-year-old patient with Wernicke–Korsakoff-encephalopathy.

**Method:** Integrative literature review about Wernicke–Korsakoff-encephalopathy, after nursing assessment, based on the General Theory of Self-Care Deficit of Dorothea Orem, on admission to the Neurology ward of a third level Spanish hospital.

**Results:** An individualised care plan is proposed through the NANDA-NOC-NIC taxonomies following the nursing process. The attention to the main caregiver is highlighted in the plan, due to his great responsibility in the continuity of care on discharge, including new activities for it.

**Conclusions:** It is necessary to use standard taxonomies for the development of the scientific nursing discipline, along with a holistic approach for the individualisation of care.

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#### PALABRAS CLAVE

Planificación de  
atención al paciente;  
Neurología;  
Encefalopatía

#### Encefalopatía de Wernicke-Korsakoff: a propósito de un caso

#### Resumen

**Objetivo:** Desarrollar definiciones conceptuales y operacionales para definir características y factores relacionados (plan de cuidados individualizado de enfermería) de una paciente de 50 años con encefalopatía de Wernicke-Korsakoff.

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de Wernicke;  
Cuidadores

**Método:** Revisión integradora de literatura acerca de la encefalopatía de Wernicke-Korsakoff, para la valoración de enfermería, basada en la Teoría General sobre el Déficit de Autocuidado de Dorothea Orem al ingreso en la unidad de Neurología de un hospital español de tercer nivel. **Resultados:** Se propone un plan de cuidado individualizado a través de las taxonomías NANDA-NOC-NIC siguiendo el proceso enfermero. Destaca la importancia de la atención al cuidador principal, debido su responsabilidad en la continuidad de los cuidados al alta, incluyendo para ello una propuesta de actividades específicas.

**Conclusiones:** Es necesario el uso de taxonomías estandarizadas para el desarrollo de la disciplina científica de enfermería, junto a un abordaje holístico para la individualización de los cuidados.

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## Introduction

Wernicke encephalopathy is a neurological syndrome with a characteristic triad of symptoms: ocular mobility disorders (nystagmus and ophthalmoplegia), changes to mental health and altered gait, which only present in 16% of reported cases.<sup>1</sup> Aetiology is diverse and is associated with a deficiency in thiamine or malnutrition coupled with alcohol abuse.<sup>1,2</sup> Not all patients are diagnosed in time and may develop Korsakoff syndrome or encephalopathy, the patients of which present with changes to memory (anterograde amnesia) serious temporary disorientation and, in the initial phases, may present with confabulation and also memory loss.<sup>1</sup> These changes, due to neuronal necrosis from insufficient protein, lead to irreversible structural lesions in the brain areas.

Diagnosis of Wernicke–Korsakoff syndrome (WKS) is complex and essentially clinical because the laboratory tests are not a “gold standard” and diagnosis through imaging with magnetic resonance only provides sensitivity of 53%.<sup>2</sup> However, each patient needs an individualised approach of nursing care, because the symptomatic signs referring to the cognitive status and anterograde amnesia are a hindrance to working with the patient, as is learning about the course of the disease.

The aim of this study was to draw up an individualised nursing care plan for one patient aged 50 with WKS, through the NANDA-NOC-NIC taxonomies, in keeping with Spanish legislation on clinical data in medical histories.<sup>3</sup>

## Presentation of the case

M.G.S., a woman aged 50, presented at the emergency service of the Princesa University Hospital with symptoms of dizziness when getting out of bed and instability of gait, leaning over to the right side. Her husband also stated that the patient’s general state of health had been compromised, with confusion, disorientation and repetitive behaviour over the previous 2 days. Computerised tomography of the brain was performed which revealed a right parasagittal frontal extra-axial modular tumour compatible

with meningioma. Magnetic resonance was also performed where enlargement of the mammillary bodies was observed in vertebra T2, in the region medial to the thalamus and in the lower tectal region. A blood test was also performed, indicating an increase of the 3 cellular lines (haemoglobin 17.2; platelets 439,000, leukocytes 13,930 with neutrophilia) and an increase in hepatic enzymes (GOT 454, GPT 351, GGT 212, FA 142). Symptoms and diagnostic tests were indicative of a possible diagnosis of WKS, and we decided to admit the patient to the neurology department for study of the possible alcohol or deficiency based origin.

On admission to the ward the nursing team proceeded to carry out an evaluation through prior review of the medical history, together with an interview with the patient, data supplied by her husband and a physical examination. Collected data were classified according to the General Theory of Self-care Deficit by Dorothea Orem, to be attained by means of self-care or dependent care and which are necessary for regulation of human functioning and development in regulations compatible with life, health and well-being.<sup>4</sup>

## Air intake

The patient’s medical record reflected a history of high blood pressure, controlled with 5 mg of bisoprolol at breakfast time. Blood pressure was reviewed: 129/82 mmHg. There were no changes to respiratory or cardiac patterns.

## Liquid and food intake

On admission the patient was nervous and drank a sip of water from a bottle. She showed no difficulty in swallowing, signs of dehydration or oedemas. She referred to inappropriate dietary habits, such as an insufficient intake of fruit and vegetable, because “her children do not like them and why would she cook them if she was just going to throw them away”, and a preference for fried foods. She added that she had the occasional feeling of nausea. The patient

was diagnosed with obesity type I. The Mini Nutritional Test was performed with a result of 21.5 points, indicating risk of malnutrition.<sup>5</sup>

### Care associated with elimination process

Continent: she maintained a deposition pattern every 2 days, although she did not recall the date of the last one. Abdominal auscultation revealed hydro-aerial sounds. Her abdomen was soft and depressible and painless on palpation. A 2 cm liver enlargement was observed.

### Balance between activity and rest

The patient had been sleeping around 4–5h for some months: *“I find it really difficult to get to sleep and then I wake up very easily”*. Her husband stated that for the last 3 days she had slept even less and that *“she spends the night doing things in the home”*.

### Balance between solitude and human interaction

On admission she was accompanied by her husband. Anterograde amnesia with confabulation was observed: the patient confused the ages of her children and believed they lived with them despite the fact they lived abroad. At the interview, she was conscious and oriented in person, but disoriented in space and time. She was then asked about her employment situation: she worked cleaning 2 h in the mornings, *“they don’t pay much but with my husband’s pension we manage”* and at the weekends she goes out with her husband to *“have a few beers”*.

### Prevention of hazards to human life, well-being and functioning

Allergic to penicillin. Smoker. She stated she was an occasional drinker of alcohol. However, her husband insisted there were always beers at home, which he did not drink or buy. Her personal hygiene was insufficient: periodontitis, flaky scalp and obvious lack of hygiene. A peripheral venous line was cannulised in the upper right limb. The patient was raised up to observe changes in gait. She was dizzy and unstable and had to hold on to the furniture for support. A headache forced the patient to sit back down in the chair. Due to changes in gait the risk of falling she could suffer from was assessed on the Downton Scale<sup>6</sup> which resulted in a high risk of falls (3 points).

### Promotion of human functioning and social development

She did not remember the reason for her admission: *“I am here because my husband has been hospitalized”* and self perception of her illness was absent. Examination of the cranial nerves was performed, with changes presenting in nerves III and VI: vertical nystagmus with supraversion, paresis of the bilateral nerve VI where the patient showed a limitation in abduction in both eyes, not surpassing the midline. Her osteotendinous reflexes were missing in lower

limbs. A slight increase in the Fick angle and instability with leaning towards the right was also observed when walking.

### Diagnosis, planning and execution of care plan

Table 1 contains the care plan in compliance with the NANDA-NOC-NIC taxonomies with priority nursing diagnoses, the intended results to achieve and the interventions and activities required.<sup>7–9</sup> In the case of patients with WKS with irreversible impairment, one of the primary care plan points to address is the interventions with the main caregiver, who will have to accept many care responsibilities for a dependent person when they are discharged from hospital. It is therefore important to have a thorough awareness of the disease and the available resources. An appropriate care plan which includes both hospital-based and long-term care is essential. However, given the complexity of the disease these measures must be addressed by a multidisciplinary team (Table 2 contains potential complications and collaboration difficulties), together with the main caregiver who will become the essential keystone to treatment and the prevention of associated complications for the patient.

### Discussion

The figure of the caregiver has been considered essential in patient evolution. For this reason Orem’s General Theory of Self-care Deficit was chosen as the main caregiver is necessarily considered, as the age of dependent care who will offer continuity to the plan following hospital discharge.<sup>4</sup> The use of standard taxonomies for the development of the scientific discipline of nursing is necessary. However, on some occasions given its holistic nature and the differences in legislation or authority in each region, changes and individualizations in care are required, using activities or interventions and even aims or diagnoses which have not yet been put forward.

Creating an individualised care plan is, in this case, essential for patient management. However, when choosing interventions and activities in the care plan there was a lack of activities within the chosen interventions aimed at active education of the caregiver. It is noteworthy that the proposed activities are formulated to assess knowledge and skills and no proposal exists regarding training towards these. They are reflected in the paediatric area as: *“(5662) teaching: toddler nutrition (25–36 months)”*.<sup>9</sup>

We may observe major aspects such as the risk of falling and impaired independent ability to walk. The prevention of falls is an essential activity because it is a criterion of care quality, and the direct responsibility of the nursing team. In Spin, the Downton scale is used, but a recent study showed that it has a sensitivity rate of 58% and specificity rate of 62%, classifying the majority of patients as high risk simply because they are medicated.<sup>10</sup> Another study includes hyponatremia as a risk factor of falls. We did not find any similar results although we should take this into account as an event to be monitored. Although these aspects are essential, we must not forget quality of life during hospital stay and impaired hours of sleep.<sup>11</sup>

**Table 1** Main nursing diagnoses, outcomes and interventions.

*[00095] Insomnia related to pharmacological agents, alcohol consumption, mean daily physical activity lower than that recommended for gender and age, inadequate sleep due to changes in sleep pattern, difficulty in falling asleep, difficulty in staying asleep, waking up early*

NOC	[0004] Sleep	01. Hours of sleep	1/3d
		21. Difficulty in falling asleep	1/3a

Time of completion: 3 days after hospital admission

- NIC [1850] Improve sleep
- Include the regular sleep/awake cycle of the patient in care plan, every day after information exchange in morning shift
  - Observe/record pattern and number of hours of sleep of the patient, in night shift and ask room companion in the morning
  - Adjust ambience (light, noise, temperature, mattress and bed) to encourage sleep, every night
  - Group care activities to minimise the number of disturbances; allow sleep cycles of at least 90 min, every night
  - Teach the patient to do autogenic muscle relaxation or other non pharmacological ways of inducing sleep, before going to bed

*[00088] Impaired gait related to impaired balance due to impairment of ability to walk the required distance*

NOC	[0208] Mobility	01. Maintaining balance	1/3d
		05. Ability to move purposefully	2/3d

Completion time: 7 days after hospital admission

- NIC [0222] Exercise therapy: balance
- Help them to stand (or sit) and sway from side to side to stimulate balance mechanisms, once per shift on accompanying the patient to the bathroom
  - Help the patient to practice standing up with their eyes closed for short periods of time at regular intervals to stimulate proprioception. On accompanying the patient to the bathroom
  - Encourage the patient to maintain a broad support base, provided the patient walks

- NIC [0221] Exercise therapy: walking
- Dress the patient in comfortable garments, after washing
  - Apply/provide a support device (stick, crutches, wheelchairs, etc.) for walking if the patient is unstable when admitted to hospital

*[00043] Ineffective protection related to substance abuse, ineffective nutrition due to disorientation, neurosensorial impairment, insomnia*

NOC	[1004] Nutritional status	01. Intake of nutrients	1/3c
		02. Intake of food	1/3c

Completion time: during hospital stay

- NIC [5246] Nutritional counselling
- Determine intake and eating habits of the patient, in initial nurse's evaluation and after each meal
  - Determine the attitudes and beliefs of close family members about food, eating and the patient's necessary nutritional change for the first three meals after admission
  - Establish short and long term realistic goals to change nutritional status, the second day after admission before lunch and on nursing assessment at discharge
- NIC [1120] Nutritional therapy
- Ensure that the diet includes foods rich in fibre to prevent constipation, after choosing the patient's diet in the morning shift
  - Give the family written examples of the prescribed diet, on discharge from the hospital

NIC [1100] Nutrition management

Table 1 (Continued)

<ul style="list-style-type: none"> <li>• Determine the patient's nutritional status and their ability to satisfy their nutritional needs, in the hospital admission assessment and when they are discharged from the hospital, together with the family</li> <li>• Provide food choices whilst guiding towards healthier options every day when the menu choice arrives</li> <li>• Teach the patient and the family about dietary requirements concerning their condition, once every two days prior to lunch</li> </ul>			
NOC	[1269] Withdrawal of alcohol consumption	30. Eliminate alcohol consumption	1/5b
Completion time: on hospital admission and maintaining after hospital discharge			
NIC	[4360] Change in behaviour		
<ul style="list-style-type: none"> <li>• Provide continuous emotional support to the patient/family every day</li> <li>• Provide guidance on reality whenever the patient becomes disorientated</li> <li>• Observe whether there is surreptitious alcohol consumption during disintoxication, once per shift</li> </ul>			
NIC	[4512] Treatment for toxic substance consumption: removal of alcohol		
<ul style="list-style-type: none"> <li>• Monitor the appearance of delirium tremens, in each shift and more frequently at night</li> <li>• Medicate to relieve physical disturbances, according to medical prescription</li> <li>• Administer vitamins, according to medical prescription</li> </ul>			
<i>[00193] Personal care neglect related to changes in cognitive function due to insufficient personal hygiene</i>			
NOC	[0313] Self-care level	05. Maintains personal hygiene	2/5d
		06. Maintains oral hygiene	1/5d
Completion time: on admission and during hospital stay			
NIC	[1801] Help with self-care: bathing/hygiene		
<ul style="list-style-type: none"> <li>• Determine the amount and type of help required, on admission of the patient, when starting shift and when finishing shift</li> <li>• Provide assistance until the patient is totally capable of self care, during hospital stay once a day and whenever necessary</li> <li>• Provide personal objects (deodorant, toothbrush and bath soap, shampoo, lotion and aromatherapy products) during patient hygiene</li> </ul>			
NIC	[6462] Dementia management: bathing		
<ul style="list-style-type: none"> <li>• Use a flexible strategy allowing choices and control regarding time of day and type of bathing (shower, bath or sponge down), once a day</li> <li>• Give a reason for bathing (e.g. "let's take a bath before your husband gets here"), before bathing and when patient is reluctant, once a day</li> <li>• Use soft persuasion, not compulsion, when carrying out personal hygiene whenever the patient is reluctant, once a day</li> <li>• Encourage the patient to collaborate when bathing according to her abilities, during patient personal hygiene</li> </ul>			
NIC	[1710] Oral health maintenance		
<ul style="list-style-type: none"> <li>• Establish a mouth care routine, on admission and use it after each meal</li> <li>• Encourage and help the patient to brush her teeth, after every meal</li> </ul>			
<i>[00129] Chronic confusion related to Korsakoff psychosis due to chronic cognitive impairment</i>			
NOC	[0920] Level of dementia	31. Altered level of consciousness	1/2d
Completion time: prior to hospital discharge			
NIC	[6460] Dementia management		

Table 1 (Continued)

<ul style="list-style-type: none"> <li>• Introduce oneself on initiation of contact, whenever entering the patient's room</li> <li>• Determine appropriate behaviour expectations for the patient's cognitive status, in admission assessment and at the end of the evening shift</li> <li>• Identify the degree of cognitive impairment using standardised assessment tools, on admission assessment and discharge assessment</li> <li>• Arrange with family members and friends the best way of interacting with the patient, before entering their room</li> <li>• Help the family to understand that it may be impossible for the patient to learn new information, on admission to the ward</li> </ul>			
NOC	[0901] Cognitive guidance	03. Identify where one is	2/3d
		04. Identify the current day	1/2d
		05. Identify the current month	1/2d
Completion time: prior to hospital discharge			
NIC	[4720] Cognitive stimulation		
<ul style="list-style-type: none"> <li>• Consult the family to establish the baseline cognitive level of the patient, on hospital admission</li> <li>• Provide a calendar, on patient admission</li> <li>• Guide with regard to time, place and person, once per shift with all constants</li> <li>• Use memory aids: lists, programmes and reminders, at the start of the day in the morning shift with programmed activities or things</li> </ul>			
NOC	[0908] Memory	02. Remembers recent information precisely	1/2d
Completion time: prior to hospital discharge			
NIC	[4760] Memory training		
<ul style="list-style-type: none"> <li>• Stimulate the memory using repetition of the last thought expressed by the patient, whenever speaking with the patient</li> <li>• Identify and correct the patient's errors of orientation, whenever these occur during interaction with the patient</li> </ul>			
<i>[00062] Risk of tiring of caregiver role related to substance abuse, altered cognitive functioning of the care receiver, the caregiver is the partner, receiver of care when home with major care requirements</i>			
NOC	[2210] Resistance of caregiver role	12. Support of healthcare professional to caregiver	5/5e
Completion time: maintain during hospital stay			
NIC	[7040] Support for main caregiver		
<ul style="list-style-type: none"> <li>• Determine the degree of caregiver knowledge, for hospital admission and discharge of the patient</li> <li>• Acknowledge the dependence the patient has of the caregiver, on the day of hospital discharge in the morning shift</li> <li>• Explore with the caregiver how they are coping, twice a week during the afternoon shift</li> <li>• Help the caregiver to establish limits and care for themselves, every day during the morning and afternoon shift</li> </ul>			
NOC	[2202] Preparation of the home family caregiver	02. Familiarity of the role of family caregiver	1/4e
		14. Social support	1/5e
		15. Confidence in their ability to control healthcare	1/3e
Completion time: on the day of hospital discharge, prior to this			

Table 1 (Continued)

NIC	[5602]Teaching: course of the disease		
	<ul style="list-style-type: none"> <li>• Comment on the changes to the lifestyle which may be necessary in order to avoid future complications and/or control of the course of the disease, after carrying out a nursing assessment and on hospital release day</li> <li>• Describe any possible chronic complications on the day of hospital discharge</li> <li>• Emphasise the information supplied by other members of the care team, after the doctor's visit every day</li> </ul>		
NIC	[8100] Referral		
	<ul style="list-style-type: none"> <li>• Get in contact with the centre/caregiver, during morning shift on the day of hospital discharge</li> <li>• Send the referral report and the patient care plan electronically, on the day of hospital discharge, prior to the same</li> <li>• Determine whether physiotherapy services are available for home use, on the day of hospital discharge</li> </ul>		
NIC	[7110] Family involvement		
	<ul style="list-style-type: none"> <li>• Establish a personal relationship with the patient and family members who will be involved in care, during hospital stay</li> <li>• Identify the expectations of the family members with regards to the patient, on assessment and hospital discharge</li> <li>• Encourage care by family members during hospital stay</li> <li>• Observe the involvement of family members in caring for the patient, during hospital stay</li> <li>• Inform family members of the factors which may improve the patient status, during the morning shift on the day of hospital discharge</li> </ul>		
NOC	[0312] Preparation for discharge: living with support	01. Need for professional support 02. Need for family support 08. Describe a care continuity plan	1/4b 1/5b 1/4b
	Completion time: on the day of hospital discharge, prior to the same		
NIC	[7370] Discharge planning		
	<ul style="list-style-type: none"> <li>• Comment on financial resources the day after hospital admission if reorganisation is required to receive care after discharge</li> <li>• Help the family/close relatives in planning the necessary support groups to provide care outside hospital, the week before hospital discharge in the morning shift</li> <li>• Co-ordinate different healthcare professions to ensure correct discharge, every day after the doctor has visited in the morning shift</li> <li>• Develop a plan that takes into consideration healthcare, social and economic needs of the patient prior to hospital discharge</li> <li>• Identify necessary understanding or abilities by the patient and the main caregiver to put into practice after discharge, the last three days prior to hospital discharge during the afternoon shift</li> </ul>		
	[00155] Risk of falls related to unfamiliar environment, altered cognitive function, impaired balance, difficulties walking		
NOC	[1912]Falls	02. Falls while walking	5/5a
	Completion time: maintain during hospital stay		
NIC	[6490] Prevention of falls		

Table 1 (Continued)

- 
- Identify physical cognitive impairments which may increase the possibility of falls in a given environment, on hospital admission and on the day of hospital discharge
  - Instruct the patient to ask for help when moving, whenever they need to move
  - Put up reminders so that the patient asks for help to get out of bed, when admitted to the room
  - Help unstable people to walk, whenever the patient needs to walk
  - Place the mechanical bed in its lowest position, all the time during hospital stay
  - Have secure furniture which does not fall over when used as support, during hospital stay
- 

a Scale n: severe (1), substantial (2), moderate (3), mild (4), none (5).

b Scale m: never demonstrated (1), rarely demonstrated (2), sometimes demonstrated (3), recently demonstrated (4), always demonstrated (5).

c Scale b: severe deviation from normal range (1), substantial deviation from normal range (2), moderate deviation from normal range (3), slight deviation from normal range (4), no deviation from normal range (5).

d Scale a: severely compromised (1), substantially compromised (2), moderately compromised (3), slightly compromised (2), and not compromised (1).

e Scale f: inappropriate (1), slightly appropriate (2), moderately appropriate (3), substantially appropriate (4), completely appropriate (5).

**Table 2** Collaboration problems and potential complications.*Collaboration problems: acute pain depending on headache*

NOC	[2102] Level of pain	04. Duration of pain episodes	2/4a
	[1605] Pain control	11. Refers to controlled pain	1/4b

Completion time: during hospital stay

NIC [1400] Pain management

- Assess, with the patient and the care team, the efficacy of measures taken to control pain and those which have been used 1 h after administration of analgesia
- Provide the person with optimum pain relief using prescribed analgesics when the patient refers to pain or in keeping with medical guideline

*Potential complication: withdrawal syndrome from alcohol and tobacco consumption*

NOC	[2108] Severity of substance removal	02. Compulsive substance craving	5/5a
		04. Agitation	5/5a
		32. Hallucinations	5/5a

Completion time: during hospital stay

NIC [4514] Treatment from consumption of toxic substances: removal of drugs

- Monitor withdrawal symptoms (e.g. fatigue, sensory changes, irritability, violence, depression panic attacks, craving to consume, insomnia, agitation, muscle pain, changes to appetite, yawning, weakness, headache, rhinorhea, mydriasis, shivering, anxiety, diaphoresis, nauseas, vomiting, shaking, psychosis and ataxia), during hospital stay at least once every shift
  - Administer drugs (e.g. benzodiazepines, clorpromazine, diazepam, replacement therapy for nicotine, phenobarbital, clonidine, trazodone, methadone alpha-2, adrenergic agonists and antipsychotic drugs), with awareness of cross-over tolerance, according to medical guidelines
- NIC [4512] Treatment for the consumption of toxic substances: removal of alcohol
- Monitor the appearance of delirium tremens, at each shift and more frequently at night
  - Medicate to relieve physical discomfort, according to medical prescription
  - Administer vitamins, according to medical prescription

a Scale n: severe (1), substantial (2), moderate (3), mild (4), none (5).

b Scale m: never demonstrated (1), rarely demonstrated (2), sometimes demonstrated (3), recently demonstrated (4), always demonstrated (5).

## Conclusion

Royal Decree 1093/2010 obliges nursing professionals to use the NANDA-NOC-NIC taxonomies in clinical reports, encouraging the standardisation of care of the nursing discipline. Individualisation of care, following exhaustive evaluation, leads to the creation of a care plan in keeping with the NANDA-NOC-NIC taxonomy and completing the scientific development method (Tables 1 and 2).

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None.

## Conflict of interests

None.

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