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# MEMORY EXERCISES TO IMPROVE SHORT-TERM MEMORY IN MENINGIOMA PATIENTS: CASE STUDY



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## ABSTRACT

**Introduction:** Meningiomas are a type of brain tumor that develops from the meninges (lining of the brain, that is, the membranes surrounding the brain and spinal cord). Another problem that occurs due to meningiomas and very often occurs is memory impairment. This nursing care is given with the aim of reducing memory impairment in meningioma sufferers with improved memory. **Purpose:** To determine the effect of the application of short-term memory exercises on memory impairment in meningioma patients. **Result:** The patient has been stiff for 1 month, speaks indirectly, often barks, irritability and headaches such as pulling. Results of MCT-Scan Head examination with contrast, effect: Vasogenic edema extensive in the bilateral frontotemporoparietal lobe, no picture of enhancing mass. Blood pressure: 109/65mmHg. Pulse; 90x/min, Temperature; 36.2°C, Respiration; 20x/min, SpO<sub>2</sub>; 99%, Weight; 53kg, Height; 150cm. **Conclusion:** The implementation of nursing given to Mrs. S with Chordoid Meningioma obtained very significant results in improving short-term memory and decreasing acute pain after being given memory training interventions and deep breath relaxation. Improvement in short-term memory has begun to be seen at the first intervention as well as acute pain reduced from 6 to 4.

**Keywords:** Memory impairment, memory training, acute pain, pain management

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## INTRODUCTION

Meningiomas are a type of brain tumor that develops from the meninges (lining of the brain, that is, the membranes surrounding the brain and spinal cord). Slow growth comes from meningothelial cells, which is about 24-30%. There are three layers of meninges called dura mater, arachnoid and pia mater. Meningiomas often occur in women with a ratio of 2.33 and 1.22. Most meningiomas are partially categorized as benign tumors 90% with the remaining 10% being atypical or malignant. (Rao & Samiullah, 2019).

The cause of meningiomas until now is not known with certainty. Several things are suspected to be factors in meningiomas including genetic factors, hormones and previous radiation exposure (Sunantara et al., 2021). According to the Ministry of Health (2022), factors that affect a person more at risk of experiencing meningiomas are having undergone radiotherapy on the

head, suffering from congenital nervous system disease (neurofibromatosis type 2) and having excessive weight. Meningiomas are divided into three levels, namely: Grade 1, the tumor is still benign and slow growth. Grade 2, tumor growth is faster and has the possibility to grow again after removal. Grade 3, malignant tumors whose growth and spread are very fast, which is 95-95% with a frequency rate in 5 years of 3% (Arinda et al., 2019).

Another problem that occurs due to meningiomas and very often occurs is memory impairment. Memory impairment or cognitive impairment is a disorder that affects a person's thinking ability, causing problems with memory, perception and learning. Signs and symptoms of a person affected by memory impairment are often forgotten. In addition, possible factors also affect cognitive function, namely the location and volume of the tumor. Based on location, left-sided meningiomas were

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significantly associated with lower verbal memory compared to right-sided meningiomas. Meningioma volume directly affects the surrounding brain tissue because meningiomas grow within the membrane around the central nervous system but they are located adjacent to the cerebral cortex where cognitive function is located (Patricia, 2021).

Based on the results of meningioma studies on one of the 49-year-old Post- Radiation Excision Mothers in the Alamanda Room of Prof. Dr. Margono Soekarjo Paviliu Abiyasa Hospital, it was found that in the Alamanda Room there were repeated patients with cases of patients unable to remember their own names or husbands and even family members. Patients can easily forget events that have just happened such as days/ dates and sometimes patients can forget for quite a long time herefore patients need treatment for memory impairment.

## METHOD

The method used in writing uses *case study analysis based on nursing intervention* with description analysis. The sample used was a chordoid meningioma patient with memory impairment. The stages carried out are (1) compiling questions (PICO) to be solved, (2) tracing evidence related to the case to be discussed, (3) assessing the evidence obtained in stage two, and (5) evaluating the implementation of EBN. In the first stage, the questions presented refer to PICO (Problem/ population, intervention, comparison and outcome), namely "what interventions can be given to improve memory and reduce pain levels in meningioma patients?". Furthermore, in the second stage, conducting a search using electronic media, namely the Google Scholar database with articles from 2013-2022 using *Google Scholar* 9 articles were obtained and it was found that short-term memory exercises and deep breath relaxation therapy are nursing interventions that can be used. The next stage of EBN application in meningioma patients begins by explaining the procedure to the patient and family before the intervention is carried out. Informed consent is done verbally to ask for consent

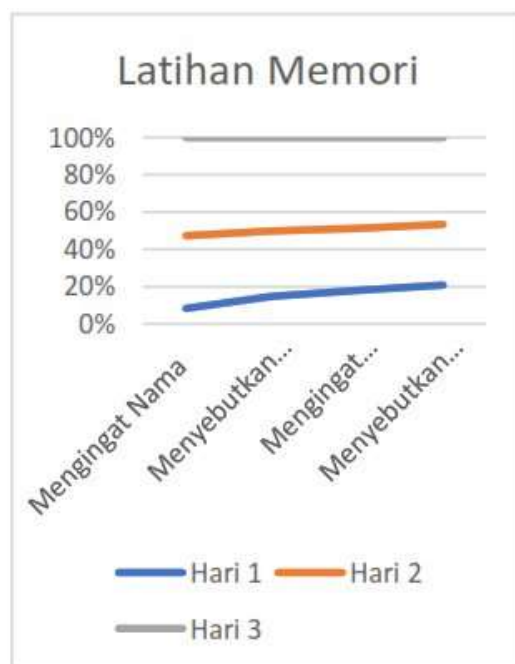
from the patient and family. A comprehensive assessment of patients was carried out before EBN was implemented. Memory training interventions and deep breath relaxation are performed simultaneously for 10-15 minutes. The improvement of the patient's condition was monitored with improved memory and decreased pain levels with actions carried out for 3 consecutive days from May 9, 2023 – May 11, 2023. Short-term memory training therapy given 2 times a day by memorizing 1-3 words per day which will be repeated morning and afternoon then 4-6 words will be added the next day and will be added to 7-9 words and will be asked to be said one by one.

## RESULT

The results of nursing evaluations and interventions carried out for 3 days carried out morning and afternoon were an increase in memory and decreased pain levels with the criteria for the results of verbalizing forgotten experiences 5 (decreasing) to 1 (increasing), verbalization of forgetfulness 5 (decreasing) to 1 (increasing), and complaints of pain 1 (increasing) to 5 (decreasing), grimacing 2 (moderately increasing) to 5 (decreasing), restlessness 3 (moderate) to 5 (decreased), blood pressure 3 (moderate) to 5 (improved), sleep pattern 2 (moderately worsened) to 5 (improved). The criteria for successful intervention in this case study are improved memory and decreased pain levels.

## DISCUSSION

The implementation of nursing provided for 3 days, starting on May 9-11, 2023, is carried out two times (morning and afternoon) in 1 day. The implementation of nursing provided is memory exercises and deep breath relaxation. The authors set indicators of success of the intervention seen from improved memory and decreased pain levels before and after the action.



**Grafik Terapi Latihan Memori**

The improvement in memory had begun to be seen on the first day when the second intervention during the day Mrs. S began to be able to remember her husband's name and tried to remember the names of family members one by one. this was influenced by Mrs. S's desire for her memory to return again. This is supported by research conducted by Nurul Hidayati, (2013) which states that memory is the ability to receive, retain and recall information obtained over time. Memory exercises are teaching the ability to improve memory. In addition, memory exercise is also repetition in memory retention, it involves repeating information repeatedly in order for the information to be processed and stored as memory.

## CONCLUSION

The implementation of nursing given to Mrs. S with Chordoid Meningioma obtained very significant results in improving short-term memory and decreasing acute pain after being given memory training interventions and deep breath relaxation therapy. Improvement in short-term memory has begun to be seen at the first intervention as well as acute pain

reduced from 6 to 4.

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