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Optimal Nursing Care Provided to the Neurosurgical Patients with Disturbed Higher Cortical Functions

Optymalna opieka pielęgniarska w klinikach neurochirurgii nad chorymi z zaburzonymi wyższymi
czynnościami nerwowymi

Disturbed higher cortical functions is an actual or potential problem of many hospitalized patients. Good nursing care is the key to the successful outcome and adaptation of the patient and the family to the dilemma that has altered their life-style (3). Primary nursing is the nursing care provided by one nurse, who plans, implements, and evaluates the total care of an individual patients from admission to discharge. In the team nursing system, the team leader spends most of the time planning, directing and checking on the other team members. Regardless of the type nursing care system is necessary to establish optimal nursing care system that could be applied to the unit organization and individual needs of the patients. Optimal care system could be derivate from nursing research and literature as a theoretical model of care in relation to the diagnosis, type of surgery performance status and degree of neurological damage.

METHOD

The study group comprised 25 patients treated because of vascular, neoplastic and posttraumatic intracranial disorders in the Department of Neurosurgery, Medical Academy in Lublin.

Seventeen of the subjects were man and eight were women. Their age range was 16—87 with mean 45 years. Each patient was tested with Mini-Mental State and assessed according to Nursing Care Category and Level.

MINI-MENTAL STATE

Orientation to time and place	10
Immediate recall	3
Short-term memory	3
Calculation	5
Language	6
Constructive ability	3
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Maximum score	30 points

The Mini-Mental State measures orientation to time and place, immediate recall, short-term memory, calculation, language, and constructive ability. The maximum Mini-Mental State score is 30. The guidelines for its administration are short, and the scores for each item are recorded on the test form itself. The test is widely used because of its ease of administration and scoring (1, 4).

Nursing Care Categories were established by stratification of patients according to complexity, intensity and time required for primary nursing care (2).

CATEGORY OF NURSING CARE

Categories of the Optimal Nursing Care: 1) self-sufficient, 2) help and stimulation, 3) bed-ridden care, 4) intensive care (Table 1).

Table 1. Nursing Care Level calculated from Nursing Factors of each category

Care Factor	Category of Care			
	1	2	3	4
Mobility	4	3	2	1
Hygiene	4	3	2	1
Feeding	4	3	2	1
Elimination	4	3	2	1
Vital signs	4	3	2	1
Transport	4	3	2	1
Treatment	4	3	2	1
Knowledge	4	3	2	1
Psychosocial	4	3	2	1
Range	36—32	31—23	22—14	13—9

Category 1. Patient fully mobile, makes the bed. Keeps oral and body hygiene. Does not need special diet, self-sufficient in eating and drinking. Blood pressure, pulse, respiratory pattern are recorded every 24 hrs. Receives simple, oral treatment. Fully oriented with adequate knowledge to provide self-care, is in good mood. Requires 1/2 hr/24 hrs' time of primary nursing care.

Category 2. Patient leaves bed when necessary. Provided with help during oral and body hygiene, dressing up, eating and drinking, needs encouraging and stimulation. Vital signs are monitored and documented every 12 hrs. Receives oral and intramuscular treatment. Is confused, needs more information and support. Requires time 1 hr per 24 hrs of primary nursing care.

Category 3. Patient is bed-ridden, moves. Requires total hygiene. Can swallow but needs feeding. Skin care is necessary. Requires monitoring and controlling of urinary and fecal elimination pattern.

Vital signs monitored and documented every 4 hrs. Composite, intramuscular and intravenous treatment. Depressed level of consciousness, depression, fear. Time of primary care 1 1/2 hrs per 24 hrs.

Category 4. Patient bed-ridden, immobile, properly positioned with frequent turning. Hygiene completely provided to. Unconscious. Frequent massage to ensure skin integrity. Intensive intravenous treatment, tube feeding, intubation, tracheostomy, bladder catheterization. Vital signs assessed and documented every hour. Support of the family. Time 3 1/2 hr per 24 hrs of primary nursing care.

ESTIMATION OF NURSING CARE LEVEL

Each category consists of nine care factors: mobility, hygiene, feeding, elimination, vital signs, transport treatment, knowledge, and psychosocial. Each factor in each category receives 4 to 1 points. Nursing Care Level (NCL) of the patients is calculated as below:

$$NCL = F_1 \times 4 + F_2 \times 3 + F_3 \times 2 + F_4 \times 1$$

NCL — Nursing Care Level.

F_{1-4} — numbers of factors in each category representing care required.

The obtained results were calculated using compatible IBM/AT personal computer and Statgraf software for regression analysis.

RESULTS

Regardless of the type of intracranial disorder patients presented different degrees of disturbed higher cortical functions and nursing care levels. There was high positive correlation between Mini-Mental State score and Nursing Care Level with correlation coefficient 0.83 at statistically significant level $p < 0.05$ (Fig. 1).

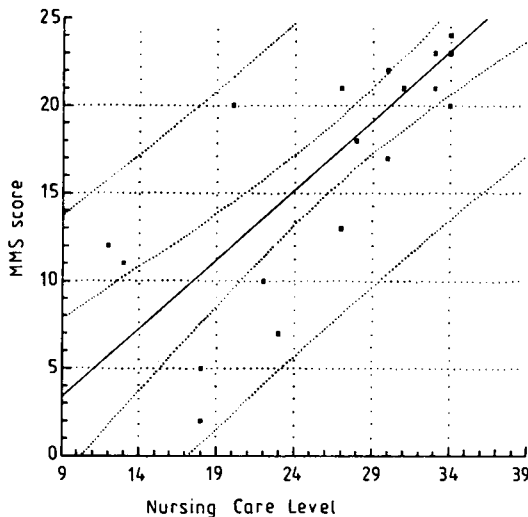


Fig. 1. Relationship between Mini-Mental State score and Optimal Nursing Care Level

Conclusions

1. Disturbance of the higher cortical functions of patients with intracranial disorders influence significantly complexity and intensity of primary nursing care.
2. Disturbance of the higher cortical functions should be considered as a major care factor for construction of the optimal nursing care model.

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Otrzymano 1992.02.09.

STRESZCZENIE

Optymalizacja opieki pielęgniarskiej nad chorymi w klinikach neurochirurgii ma na celu stworzenie takiego jej modelu, w którym stwierdzenie stopnia określonych dysfunkcji układu nerwowego warunkuje zakres i intensywność tej opieki.

Materiał badawczy stanowiło 25 chorych leczonych z powodu zaburzeń wewnątrzczaszkowych o różnej etiologii. Zostali oni poddani badaniu testem Mini-Mental State, pozwalającym na szybki orientacyjny pomiar stanu wyższych czynności nerwowych. Wyróżniono także 4 kategorie opieki pielęgniarskiej opisane przez 9 wyznaczników opieki, z których każdy punktowano od 1 do 4. Następnie według podanego wzoru wyliczano poziom opieki pielęgniarskiej dla każdego chorego.

Stwierdzono dodatnią korelację pomiędzy stanem wyższych czynności nerwowych badanych metodą Mini-Mental State a poziomem opieki pielęgniarskiej przy współczynniku korelacji wynoszącym 0,83 i poziomie istotności $p < 0,05$. Zaburzenia wyższych czynności nerwowych stwierdzane u leczonych chorych wymagają określonego poziomu opieki pielęgniarskiej.