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Regaining functional independence by neurological patients

Neurology is a complex branch of medicine dealing with many diseases of unknown etiology, chronic and degenerative nature and unfavourable prognosis. Many neurological disorders lead to disability mainly due to paresis or paralysis; therefore, regaining by patients functional independence, i.e. locomotor activity, self-care, as well as social and psychological functions is very important (8, 9).

Locomotor activity is associated with the mobilization of the disabled and training them in self-care. The process of mobilization covers changes of position in bed and while sitting, assuming of erect position and locomotor activity with the use of orthopaedic equipment, or unaided.

Self-care covers the skills to cope with everyday activities connected with the biological functioning of the body. Moreover, it has a psychological aspect as physical deficiency unfavourably affects well-being and quality of life. Training in self-care is applied in the case of patients who are totally disabled (total compensation system by D. Orem) or with a partial self-care deficiency (partial compensation system by D.Orem). Self-care efficiency is the degree of independence of a disabled person within the scope of hygiene, control of cardiopulmonary parameters, consumption of meals, increasing the efficiency of sphincter muscles, as well as prevention of complications (1-9).

Psychological and social functions cover: intellectual efficiency (communication and cognitive skills), family relations, continuation of occupational activity or education, and social contacts (6, 7).

OBJECTIVE

The aim of the study was to evaluate the effect of nursing care on the process of regaining functional independence by neurological patients.

MATERIAL AND METHODS

The patients in the study were provided with care by students of the Nursing Department who were serving an apprenticeship in nursing in the Neurology Clinic at University Hospital No. 4 in Lublin, over the period from January to June 1999. The study covered 80 patients – 28 males and 52 females, aged 39–67, their level of education being: elementary – 29; secondary school – 38; college – 2, and university – 11 patients. The majority of patients were married (65). Over 50% of patients in the study (42) were occupationally active, while 31 received a pension or health benefit and 7 were unemployed.

The criteria for selection were: good verbal contact, disability manifested by various degrees of hemiparesis or paraparesis (patients with vascular cerebral stroke – 38; multiple sclerosis – 33, and other neurological disorders – 9).

The data concerning patients were collected by means of a questionnaire and observation. The results obtained were expressed as a definite number of scores on the Neurological Patient's Functional Independence Scale developed by the author. The study was conducted twice among the same patients – the first stage of the study was described as a preliminary phase (Measurement 1) and the second stage as a final phase (Measurement 2). Measurement 1 was carried out at the beginning of hospitalization, whereas Measurement 2 was performed 1–2 days before discharge from hospital (2, 10, 12, 13, 15).

The application of the above-mentioned measurements in nursing allowed the assessment of the selected parameters, and facilitated the comparison and generalization of these parameters. The Scale applied was an interval scale which defined, by means of units of measure, an intensity, strength and value of particular parameters for individual patients in the study.

The Scale consisted of parameters within the scope of functional independence and covered 4 functional categories of independence, each of which was ascribed a definite number of scores: 3 scores – complete independence; 2 scores – slight limitations (patients requiring instruction and special attention); 1 score – considerable limitations (substantial aid on the part of a nurse or a person taking care of the patient); and 0 scores – lack of independence (totally passive patient requiring the total scope of care on the part of a nurse or person taking care of a patient).

RESULTS

While considering walking, an increase was observed in the percentage of patients who were completely independent – by 10.0% and those with slight limitations – by 12.5%, whereas a considerable decrease was noted in the percentage of patients in the two remaining categories. The same tendency was observed with respect to walking from bed to orthopaedic armchair or wheelchair – the percentage of completely independent patients and those with slight limitations increased by 7.5% and 12.5% respectively. Favourable changes were also noted with respect to such activities as: sitting in an armchair, standing, sitting on a toilet, getting into and out of the bath, climbing and going downstairs – the percentage of completely independent patients and those with slight limitations increased by 12.5% and 9.0% respectively, while the percentage of patients with considerable limitations or lack of independence decreased twice as much.

In general, the percentage of completely independent patients increased by 10.0% on average and of those with slight limitations – by 11.3%, while a decrease was noted in the percentage of patients of the categories: considerable limitations – by 11.3% and lack of independence – by 10.0%, which confirmed an improvement of mobility among patients in the study.

The differences in the percentage of patients were observed in Measurements 1 and 2, with clearly higher values noted for completely independent patients and patients with slight limitations, compared to those with lack of independence and considerable limitations, especially in Measurement 2. This confirmed favourable changes in locomotor activity noted among the patients in the study.

Considering the hygienic activities, based on Measurement 1, a greater number of patients were ascribed the categories lack of independence and considerable limitations – the mean percentage being 25.5% and 29.2% respectively, whereas according to Measurement 2 an increase was observed in the percentage of those ascribed to the categories: complete independence and slight limitations – by 13.2% and 13.7% respectively.

An improvement within the scope of activities associated with the consumption of meals, control of cardiopulmonary parameters and sphincter muscles, as well as prevention of muscle contractures and muscular atrophy was more dynamic. In Measurement 1 a considerable group of patients obtained higher categories – from lack of independence and considerable limitations to complete independence and slight limitations. The percentage of patients who obtained complete independence and slight limitations categories increased by 15.8% and 13.0% respectively.

In summing up the results of the study, with respect to self-care, an increase was noted in the mean percentage of patients ascribed to the categories: complete independence 13.5% and slight limitations – by 13.3%.

In Measurement 1 the greatest number of patients were ascribed to the categories: considerable limitations and lack of independence, whereas in Measurement 2 the percentage of patients completely independent and with slight limitations increased, showing

considerable dynamics in the regaining of independence by the disabled. The process of regaining independence was more dynamic with respect to self-care, compared to mobility – 5.5% on average. This allows us to presume that the patients were more capable of regaining manual skills than performing locomotor activities.

The majority of patients retained the ability of verbal communication – good verbal contact being one of the criteria for research selection. Among other intellectual functions, the greatest deficiency was noted with respect to memory and thinking. The greatest number of patients showed substantial-graphic thinking, which was confirmed by thinking analysis in various situations while performing activities or talking. This analysis created great difficulties for them. Some patients had also difficulties in remembering information. No patients had recognition disorders (gnosia). Differences between measurements were only observed with respect to orientation, thinking and remembering, where a slight improvement was observed.

Family relations were generally favourable. Over 50% of patients evaluated them as complete (proper) and over 30% – as slightly limited, while only 2.7% of patients described them as considerably limited. No patients in any of the measurements reported the loss of contact with their families.

Occupational activity did not change. At both stages of the study the number of patients occupationally active and inactive (unemployed, pensioners, in receipt of health benefit) was the same. Two patients had applied for health benefit.

The relationships between the patients and their friends were satisfactory – the vast majority of people in the study evaluated them as complete or slightly limited, only a few complained that their contacts with friends were considerably limited. In Measurement 2 the situation slightly improved. The undesirable categories did not occur.

No clear differences in the results of measurements were observed with respect to social functioning of the patients in the study. A slight increase in the percentage of patients was only noted in Measurement 2 with respect to family relations and social contacts in the categories: complete independence and slight limitations and slight decrease in categories: considerable limitations and lack of independence.

RESULTS AND DISCUSSION

The tendency to obtain higher categories of functional independence by patients remained constant and reflected not only the process of recovery, but mainly the effects of nursing care.

Considering mobility, an increase was observed with respect to complete independence and slight limitations – by 10.0% and 11.3% respectively. In the remaining categories, a decrease was noted in the percentage of patients with lack of independence and considerable limitations – by 21.3% respectively. Patients always obtained higher catego-

ries – there were no opposite situations which would manifest the deterioration of patient's state of health.

A similar phenomenon occurred as regards self-care activities, which were strongly associated with mobility, although a physically efficient patient was not always equally efficient in self-care. This was often caused by psychological reasons, e.g. unwillingness to regain independence. Therefore, the nurse has to encourage such a patient to activity, also in the sphere of everyday life. Due to the proper attitude of nurses favourable changes in self-care were observed among patients. All the disabled were rehabilitated, which is confirmed by one third of patients attaining complete independence category. A similar tendency was noted in slight limitations category, whereas in the remaining categories the percentage of patients with lack of independence and considerable limitations decreased by 13.3% and 13.5% on average.

No considerable differences were observed in psycho-social functioning, with slight differences noted only with respect to thinking, remembering and orientation in space. No patients described their family relations as unsatisfactory – they evaluated them as complete or slightly limited. Only a few patients complained of insufficient contacts with friends, most of them defined these contacts as satisfactory.

Considering the dynamics of functional independence, it should be mentioned that the process of regaining independence took a correct course and resulted in the regaining of independence by a considerable percentage of patients in the study. The regaining of independence within the scope of self-care activities was quicker, compared to locomotor activity. This was a favourable phenomenon which reflected self-care efficiency potential, despite the existing locomotor deficit. This potential should be utilized for the improvement of efficiency of the disabled and in order to improve their quality of life.

CONCLUSIONS

1. Due to the nursing-care activities an improvement was observed in the functional state of patients in the study.
2. The process of regaining independence was quicker with respect to self-care, compared to locomotor activity.
3. The degree of self-care efficiency was satisfactory – the majority of patients obtained higher categories of care, although initially the greatest percentage of them were ascribed to categories of smaller functional independence.
4. The process of regaining psychological and physical independence was dynamic, which is evidenced by data obtained by means of two measurements performed in the same patients.

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SUMMARY

The aim of the study was to evaluate the effect of nursing care on the process of regaining functional independence by neurological patients. The study covered 80 patients – 28 males and 52 females, aged 39–67. The data concerning patients were collected by means of a questionnaire and observation. The results obtained were expressed as a definite number of scores on the Neurological Patient's Functional Independence Scale developed by the author. The study was conducted twice among the same patients.

Ocena niezależności funkcjonalnej pacjentów neurologicznych

Celem badań było określenie wpływu opieki pielęgniarskiej na proces pozyskiwania niezależności funkcjonalnej przez pacjentów neurologicznych. Badanie było prowadzone dwukrotnie wśród tych samych pacjentów (80 osób: 28 mężczyzn i 52 kobiet, w wieku od 39 do 67 lat). Badania prowadzono za pomocą kwestionariusza wywiadu i obserwacji. Wyniki zostały skategoryzowane na Skali Funkcjonalnej Niezależności Pacjenta Neurologicznego.