

# Influence of Nutritional Status on Patients with Stroke Who Receive Post-Acute Care

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## Introduction

Stroke is a leading cause of disability among people in Taiwan. Numerous studies have confirmed that post-acute care (PAC) is effective in treating patients with stroke; however, few have analyzed the influence of patients' nutritional statuses on their recovery from their impaired abilities. Therefore, this study explored (1) whether nutritional statuses affect the recovery of patients in the post-acute stroke phase from their illness and (2) in which aspects nutritional statuses affect patients' recovery.

## Methods

A retrospective study was conducted by reviewing the medical records of patients with stroke who received PAC between January 2017 and December 2021. The Mini Nutritional Assessment-short form was adopted to assess the patients' nutritional statuses with a score of 12 or greater indicating a normal nutritional status and a score of 11 or less indicating unsatisfactory nutritional status. For the two groups of patients, the changes in their health-related quality of life (measured through EQ-5D) and other subdimensions before and after PAC were examined.

	Unsatisfactory nutritional status (MNA 0-11)	Normal nutritional status (MNA 12-14)	p value
age	67.51 ± 14.42	67.06 ± 11.82	0.77
days for receiving PAC	34.16±12.74	35.25±12.37	0.46
<b>Before PAC program</b>			
Modified Rankin Scale	3.75±0.43	3.43±0.49	< .001*
EQ5D: total scores	10.55±1.87	9.76±1.84	< .001*
EQ5D: mobility	2.18±0.44	2.04±0.43	0.006*
EQ5D: self-care	2.48±0.51	2.16±0.48	< .001*
EQ5D: usual activity	2.55±0.51	2.28±0.49	< .001*
EQ5D: pain/discomfort	1.62±0.65	1.61±0.60	0.93
EQ5D: anxiety/depression	1.71±0.71	1.65±0.59	0.46
<b>After PAC program</b>			
Modified Rankin Scale	3.06±0.86	2.39±0.89	< .001*
EQ5D: total scores	9.04±2.22	7.91±1.89	< .001*
EQ5D: mobility	1.83±0.54	1.57±0.54	< .001*
EQ5D: self-care	2±0.605386	1.65±0.63	< .001*
EQ5D: usual activity	2.21±0.55	2±0.51	< .001*
EQ5D: pain/discomfort	1.45±0.59	1.31±0.46	0.02*
EQ5D: anxiety/depression	1.57±0.67	1.37±0.52	0.007*

## Results

Overall, 305 patients met the inclusion criteria and were recruited (133 women (i.e., 43.61%)). Among the 305 patients, 193 (63.28%, average age = 67.51 ± 14.42 years) and 112 (average age = 67.06 ± 11.82 years) patients have unsatisfactory and normal nutritional statuses, respectively. No significant difference in age between the two groups was observed ( $p = 0.77$ ). In addition, no significant difference was found between the two group regarding the number of days for their receiving PAC (34.16±12.74 vs. 35.25±12.37,  $p = 0.46$ ). The group with an unsatisfactory nutritional status exhibited a lower quality of life during initial assessment (10.55±1.87 vs. 9.76±1.84,  $p < 0.001$ ), compared with the other group. Among the subdimensions, no significant differences were observed between the two groups only for pain and discomfort (1.62±0.65 vs. 1.61±0.60,  $p = 0.93$ ) and anxiety and depression (1.71±0.71 vs. 1.65±0.59,  $p = 0.46$ ) during initial assessment. In comparison, at the end of the study, the group with an unsatisfactory nutritional status obtained lower scores on pain and discomfort (1.45±0.59 vs. 1.31±0.46,  $p = 0.02$ ) and anxiety and depression (1.57±0.67 vs. 1.37±0.52,  $p = 0.007$ ) and showed minor improvement for these two subdimensions ( $\Delta 0.15 \pm 0.61$  vs.  $\Delta 0.30 \pm 0.53$ ,  $p = 0.03$  for pain and discomfort;  $\Delta 0.13 \pm 0.66$  vs.  $\Delta 0.27 \pm 0.52$ ,  $p = 0.04$  for anxiety and depression).

## Conclusion

Nutritional status affected the recovery of patients with stroke at the PAC phase from their pain and discomfort as well as anxiety and depression.

