

The Comparison between residents' health status for those who use NG or PEG feeding in the long term care facilities

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outline


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Background and introduction


- Swallowing impairments increase with aging.
- Estimates of the prevalence of dysphagia in older adults range from 70.3% of those living in the community to 30% of those living in the long term care facilities in Taiwan(Lin, Li, & Watson, 2011; Yeh, Lo, Fetzner, & Chen, 2010).

- Nasogastric tubes (N-G tube) and percutaneous endoscopic gastrostomy (PEG) are two major measures for clients who are unable to swallow and require enteral nutrition support.



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- The studies demonstrate that PEG reduce the ratio of gastroesophageal reflux (GER) and relieve patients' suffering caused by N-G tubes. (Lee, Shiun 2011; Yeh, Fetzer, Chen, Lu, Chuang, Chen, 2013)

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- PEG tubes have been adopted and are widely used in Western society. However, NG tube is still widely utilized in long- term nutritional support in Taiwan (Lin, Li, & Watson, 2011).

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- Health status are an important consideration when clients are placed PEG tube (Abraham, Girotra, Wei, & Azhar, 2015).
 - The Purpose of this study was to compare the differences of residential characteristics between the users of PEG tube and N-G tubes for whom resided in the long term care facilities.

Research methods

Study design and sampling

- This was a cross-sectional design study to survey 1,500 residents from 32 long term care facilities in the Greater Taipei, Taiwan between May to July in 2012.

Study tools

- Characteristics of residents: gender, age, upper arms power, the type of fed, the type of past history (heart disease, cerebral vascular accidents, peptic ulcer, liver disease, dementia, diabetes mellitus with complication), the time period of use NG feeding tube
- Glasgow Coma Scale



- Procedure

● Invite nurses who worked in 6 nursing homes and 26 LTC facilities

● 126 nurses contacted before survey.

1632 residents were taken care of these participants.
1500 residents agreed to participate.

● 545 residents required enteral nutrition

Results

- 36.3% (n = 545) of the 1,500 residents required enteral nutrition support with only 47 residents using PEG tube, remainder were fed with N-G tube.
- The mean age for the 545 subjects was 78.26 (SD 12.77) ; 395 (72.8%) were aged >75 .
- The most common medical diagnoses was stroke (n=306 ; 56.1%) . The second largest one was dementia which represented (n = 220; 40.3%).

Table 1

The comparison between residents' characteristics for users of NG tube and PEG

variable	Groups		X ² (t) value/ p value
	NG (n/ % of total)	PEG (n/ % of total)	
Mean age±SD	78.5±12.63	77.05±14.34	.741/.459
Sex			.824/.364
Male	241/44.2%	26/4.8	
Female	257/47.2%	21/3.9	
Con's level			8.702/.122
Clear	130/24.0%	15/2.8%	
Confuse	127/23.4%	12/2.2%	
Stupor	81/14.9%	6/1.1%	
Vegetative	78/14.4%	4/0.7%	
Dementia	77/14.2%	7/1.3%	
Other	3/ 0.6%	2/0.4%	

Table 2

Comparison of the experience of use NG feeding tube before admitted between NG group and PEG

variable	Groups		X ² (t)value/ p value
	NG (n/ % of NG)	PEG (n/ % of PEG)	
Using NG tube for fed before admitted (n=543)			4.83/.001**
No	(452/90.9%)	(34/73.9%)	
Yew	(45/ 9.1%)	(12/26.1%)	

*p<0.05; **p<0.01

Table 3

The comparison of the time period of the NG tube use between NG and PEG users

- After admitted

variable	Groups		t value/ p value
	NG (mean/number)	PEG (mean/number)	
The time period of use NG tube (years)	3.24/498	4.56 /42	-2.986/.003**
Total NG using years (including before admitted)	3.79/498	6.45/42	-3.708/.001**

*p<0.05; **p<0.01

Table 4

The comparison of the upper arms power between NG group and PEG group

variable	Groups		t value/ p value
	NG (mean /n)	PEG mean /n)	
Power score of L't forearm	2.22/498	2.8/46	-2.977/.004**
Power score of R't forearm	2.30/498	2.33/46	- .137/.891
Power score of L't upper arm	2.12/498	2.70/46	-2.576/.010**
Power score of R't upper arm	2.20/498	2.30/46	- .478/.633

*p<0.05; **p<0.01

Table 5

Comparison of the type of past history between NG group and PEG group

variable	Groups		X ² value/ p value
	NG(n/ % of total)	PEG(n/ % of total)	
CHF Yes NO	43/7.9% 454/83.5%	6/1.1% 41/7.5%	.887/.419
CVA Yes NO	282/51.8% 215/39.5%	24/4.4% 23/4.2%	.562/.453
PPU Yes No	47/8.6% 450/82.7%	5/0.9% 42/7.7%	.069/.794
Liver disease Yes No	5/0.9% 492/90.4%	0/0% 47/8.6%	.477/1
Dementia Yes No	201/36.9% 296/54.4	19/3.5 28/5.1%	0/.998
DM with complication Yes No	53/9.7% 444/81.6%	0/0% 47/8.6%	5.553/0.009**

Table 6


Comparison of the physical restraint between NG group and PEG group


variable	Groups		X ² value/ p value
	NG (n/ % of group)	PEG (n/ % of group)	
Physical restraint			5.96/ .015*
Yes	230/53.8%	13/27.7%	
No	268/46.2%	34/72.3%	


*p<0.05; **p<0.01


Discussion

- The prevalence rate of enteral nutrition support was 36.3% in our study. Of the 545 tube-fed subjects, 92.1% were fed with a NG tube and remainder were fed with PEG (7.9%).
- Comparing the proportion of fed with NG tube in long term care facilities in Taiwan were significantly higher than some Western countries.
- Şahin et al.(2013) pointed out that Germany, Finland, France, United Kindom had not used NG tube for fed in the long term care facilities .

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- In Taiwan , the use of PEG among long term care residents is only a small amount and this study found that they used NG tube for a long period of time before they switch to use PEG.
 - PEG tube is not widely accepted by Taiwanese because scholars have found that the choose of PEG tube is conflict from their traditional beliefs and value (Yeh, Lo, Fetzer, & Chen, 2010).

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- In this study, the most common medical diagnoses was stroke and more than half of subjects (56.1%) whereas the diagnosis of dementia was the second (40.3%).
 - In acute setting, 44% of the PEG tube user who suffer from with cancer (Clarke, Galbraith, Woodward, Holland, & Barclay, 2014)
 - In the long term care setting, the residents health condition are more stable than acute setting.

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- Glucose control in the resident with diabetes mellitus reduces complication (wound infection), and increase the motivation to use PEG.

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- PEG group residents' upper arms power were better than NG group and their physical restrain were lower than NG group. Residents with PEG tube exercise freely and do not worry self- removed NG tube when they doing daily activities.

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