

Short Communication

The relationship between social engagement and cognitive function on post-stroke patients

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ABSTRACT:

Social engagement in post-stroke patients changes. Changes in social engagement will be related to cognitive function. The purpose of this study is to analyze the relationship of social engagement with cognitive function in post-stroke patients. The type of research followed quantitative approach. The population in this study were all post-stroke patients who visited the outpatient installation and samples of 47 people and the data were analyzed by using Pearson correlation test. The results showed that social engagement in post-stroke patients was in good category (55.3%), cognitive function in the category of no disturbance (42.6%) and the pearson correlation co-efficient was $p = 0.001$ and $r = 0.509$. There is a positive relationship between social engagement and cognitive function, which is significantly significant.

Keywords:

Social engagement, Cognitive function.

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INTRODUCTION

Stroke is a circulatory disturbance in the brain and is a syndrome caused by the disruption of blood flow in one part of the brain causing a functional disorder of the brain in the form of a neurologic deficit so that a person suffers from paralysis and death (Dinata *et al.*, 2012). The World Health Organization (WHO) determined that stroke is a clinical syndrome characterized by symptoms of focal or global brain function disorder. Stroke causes death or creates abnormalities that persist for more than 24 h, without any other cause except for vascular disorders (Ovina *et al.*, 2012; Crooks *et al.*, 2008; Setiadi, 2008).

Stroke causes a variety of neurologic deficits, depending on the location of the lesion, size, areas of inadequate perfusion and amount of contra lateral blood flow (Ignatavicius and Workman, 2013). Stroke also affects various functions of the body. Clinical effects on stroke include motor loss, loss of communication, perceptual disorders, impaired cognitive function and psychological effects and bladder dysfunction (Sharom, 2014; Lawang and Robert, 2005; Schreiner and Colombet, 2005).

A comprehensive and accurate stroke epidemiological study data in Indonesia is not yet available. The increase in life expectancy has an impact on increasing stroke cases in the future. Globally, the number of deaths in Indonesia in 2011 reached 1,38,268 people or 9.70% of total deaths (Suryantika, 2013; Leon, 2003). In 2013, the number of stroke patients in Indonesia was 12,36,825 people (7%) and North Sumatra ranked 2nd with, 92,078 people (10.3%). Based on the data from Kemenkes (2013), it is known that from every 1000 people in Indonesia there are seven people suffered from stroke. Prevalence of stroke in North Sumatra is 7% of the total population (Goldman, 2000; Nehlig, 2010; Herlina, 2010; Murniasih and Andika, 2007; Wilson *et al.*, 2000).

The prevalence of stroke patients under 45

years continue to increase worldwide. Under 45 years of age it is estimated to be 7-15 cases / 1,00,000 population / year and less frequently in the group of children, i.e. 1-8 cases /100,000/year (Birawa and Amalia, 2015). At a conference of international neurologists in the United Kingdom it is reported that there are more than 1000 stroke sufferers aged less than 30 years (American Heart Association, 2010; Polit and Beck, 2012).

Wardhani (2013) found the results of cognitive function tests, which had cognitive impairment disorders of 67.5% in which mild cognitive impairment 27%, moderate cognitive disorder 40.5% and no severe cognitive impairment. Risk factors for cognitive impairment are derived from genetics, age, disease, and residence (Patterson *et al.*, 2008; Markam, 2003). In addition, environmental factors are also at risk of causing impaired cognitive function, such as relationships or social engagement (social engagement). Social engagement can be interpreted in many dimensions, one of which is the ability to maintain social relationships (Bassuk *et al.*, 1999; Meier, 2005). Rosita (2012) obtained results that social interaction has relationship with cognitive function ($X_2 = 6.830$ and $P = 0.009$). Previous research has shown that social engagement affects cognitive function. Social engagement consists of social networking components. it can be social relations and social activities, such as participation in community activities (Bassuk *et al.*, 1999; Levasseur *et al.*, 2010; Wahyuni, 2011).

The relationship of social engagement with cognitive function reflects lifestyle factors that has not been extensively studied. Moreover the basic knowledge of the association is limited. One of the reasons for this uncertainty is that the components of social engagement and cognitive function are multi-dimensional constructions but are often assessed with short dimensions. Measurement of social engagement for cognitive function level in stroke patients are done using three measures ie social network size, frequency of participa-

Table 1. Distribution frequency of social engagement in post-stroke patients

S. No	Social Engagement	Total	
		f	%
1	Good	26	55,3
	Not Good	21	44,7

tion in social activities and social support perception level.

Indonesia has a pattern of family relationships that are different from other countries, so it is necessary to examine the influence of social engagement (social engagement) to the cognitive function of stroke patients.

MATERIALS AND METHODS

Design and setting

This investigation is done through a quantitative research with correlational research design. The study was conducted on July until August 2017 at pirngadi general hospital medan.

Research subjects

Consecutive sampling technique was used with inclusion criteria: (i) diagnosed having hemorrhagic or ischemic stroke, (ii) awareness of compos mentis and cooperative, (iii) able to communicate, (iv) can read, (v) post stroke ≥ 6 months, (vi) married, (vii) willing to become respondent by signing informed consent.

Instruments

Instrument of data collection in this research is a questionnaire that is related with the respondents characteristic, social engagement and cognitive function.

Tabel 2. Cognitive function in post-stroke patients

S. No	Cognitive function	Total	
		f	%
1	Normal	20	42,6
	Minor Disturbance	18	38,3
	Severe Interference	9	19.1

Data analysis

To analyze the relationship between independent variables and dependent in this research it is done with the statistical test of Pearson correlation (Dorland, 2002; Drageset, 2004).

Ethical consideration

The research has been made and approved by the ethics commission of the faculty of nursing, university of north Sumatra. By considering the ethical aspects in a research study (ethical clearance) which includes: informed consent, anonymity and confidentiality.

RESULTS AND DISCUSSION

Social engagement

Distribution frequency of social engagement can be seen in the following table: Based on Table 1 for majority of the candidates, the social engagement is good, i.e. 26 peoples (55.3%) and an approximately equal population is not good, i.e. 21 peoples (44.7%).

Cognitive function

Based on Table 2 for majority of the candidates the cognitive function is normal, i.e. 20 peoples (42.6%), and a minority group is with severe interference, i.e. 9 peoples (19.1%) (Gofir, 2009; Trini-

Table 3. Relationship between social engagement with cognitive function

S. No	Social engagement	Cognitive function						Total		P value
		Normal		Minor disturbance		Severe interference		f	%	
		f	%	f	%	f	%			
1	Good	15	57,7	11	42,3	0	0,0	26	100	P<0.01
2	Not good	5	23,8	7	33,3	9	42,9	21	100	

ta, 2013).

Relationship between social engagement with cognitive function

The cross-table between social engagement and cognitive function in post-stroke patients are shown in Table 3. The results of cross-tabulation also showed that 26 people with good social engagement are there and is a normal cognitive function of 15 people (57.7%). Out of 21 persons with social engagement, there is not good cognitive function with severe disorder as much as nine peoples (42.9%). The test results showed a significant relationship between social engagement with cognitive function ($P < 0.05$) (Artati, 2014; Zhang, 2008).

Wreksoatmodjo (2012) found that as many as 58 elderly people (56.9%) with social engagement did not have good cognitive function with severe disorders. Statistical test using cox regression analysis showed that there was a significant relationship between social engagement and cognitive function. Elderly with bad social engagement had a risk of 2,093 (1,565-2,799) times greater to have poor cognitive function than older adults with good social engagement (Smeltzer, 2006; Taylor, 1989).

Social engagement is a social interaction with others and an approach to individual and social activities. The role of social engagement is thought to affect cognitive function (Barnes and James, 2004; Strub and Black, 2000). Rosita (2012) and Wreksoatmodjo (2012) found that social interaction is associated with cognitive function. Some previous studies have also shown that social engagement affects cognitive function. Social engagement consists of social network component that is the ability to maintain the extent of social relations and social activities that is the level of participation in activities in the society (Bassuk *et al.*, 1999; Aronson, 2002). The level of participation in community activities is known as social support. Social support is an aid or support that individuals receive from certain people in their lives and differs in certain social environments to

make the recipient feel cared for, valued and loved.

Social support is also interpreted as providing a comfortable feeling, both physically and psychologically to a person's family to face problems. Some theories Social support is a form of emotional expression that serves to protect a person from anxiety caused by one of them is their family. Social support is able to provide a form of information or advice to a person who is given based on social familiarity or because the presence of a person has emotional benefits by the effects of decisions in accordance with the wishes of the future (Price and Wilson, 2005; Safitri, 2008; Waxman, 2007; Folstein *et al.*, 1975).

A person's intimacy with others will determine the emotional connection closely and create a sense of security for them. Familiarity also provides a peaceful, safe and elite feeling that is shown with a calm and happy attitude. For example we can see from spouses, family members, close friends, close relatives who have a harmonious relationship. Keeping relationships assessed from quantity or quality in the social network is social activity. In this case, it is necessary to increase the quality of family involvement or family support. Family support is any form of positive behaviour and attitude that a family gives to a sick family member or a health problem (Friedman, 2010; Taylor, 1986; Suparlan, 2009).

CONSLUSION

The results of this study indicated that there is a relationship between social engagement with cognitive function in the stroke patients.

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