CORRELATION BETWEEN KNOWLEDGE AND BEHAVIOUR OF THE FAMILY RELATED TO FALL PREVENTION WITH ELDERLY RISK OF FALL AT PONDOK KARANGANOM KLATEN

ABSTRACT

Falls is a geriatric syndrome that often occurs in elderly. Falls can cause by several factors, such as physical condition, family behavior and the environment around elderly. This research means to investigate the correlation between family knowledge and behavior regarding fall prevention with risk of fall in the elderly. This research used cross sectional design with 57 samples of family with elderly (>60 years-old) in Pondok Karanganom, Klaten. Result shows that the knowledge level of family is in good category (100%), while family behavior is grouped into poor (90%), average (15.8%) and good (84.2%). The risk of falls among elderly categorized into high (36.8%), low (33.3%) and no risk (29.3%). Correlation score between family knowedge and fall risk is 0.133 (p value 0.323< 0.05), while correlation score between family behavior and elderly risk fall is 0.340 (p value 0.01 < 0.05). This reseacrh is another evidence that knowing is not doing and nurse should provide comprehensive assessment and intervention in managing risk of fall in the elderly.

Keywords: elderly, risk of fall, knowledge, behavior , Indonesia.

INTRODUCTION

Elderly population is growing rapidly worldwide, not only in developed countries but also in developed countries around the world. This phenomenon due to several factors, two main factors are the increase of longevity and the decrease of birth rate. From the latest world population census, Indonesia has experienced an increase in the number of older people (60 years and above) from 3.7 % in 1960 to the current level of 9.7 % in 2011. This figure is projected to increase to 11.34 % by 2020 and 25 % by 2050 (BPPN, BPS & UNFPA 2005; UNDESA 2015). Although the percentage of elderly population in Indonesia is not as high as other countries in ASEAN, but due to its large population, the number of elderly in Indonesia is 4th largest in the world after India, China and US (Viora, 2013).

The increasing population of elderly brings challenges for the government and decision maker, since old people suffer several chronic diseases due to aging process. Therefore this age group needs more health services. Fall is one of geriatric syndrome that happen almost 30% by elderly and one of the main factor for death and disability in this age group. Twenty percent of elderly who disable cause of falls will lose independency in activity daily living (ADLs) and decreasing in Quality of life (WHO, 2007)

Falls influenced by several factors, which are internal and external factors (Lemier & Silver, 2008). Intrinsic factors include sex, age, muscle weakness, sensory deficit, chronic illness, and cognitive impairment (Edelberg, 2006). Extrinsic factors are drugs, environmental factors,

alcohol consumption, inadequate of safety principles, inappropriate footwear and housing design) (Jamebozorgi, 2013). Preventing falls is better than cure it. Family living with elderly should know what factors can contribute to fall accident and how to manage it. For example family should encourage their elderly to maintain their physical and mental health with have routine medical checkup, adherence to medical treatment and regular physical exercise. And also family member can contribute to create a safe housing environment for their elders. Since most of elderly in Indonesia live with their families (Abikusno, 2002). Falls prevention program for elderly in community should supported by family member. The first thing is to assess the knowledge and behavior of elderly regarding to falls prevention. And also we need to know the risk of falls among the elderly and relationship between those two variables.

AIM

This research aims to assess the correlation between knowledge and behavior of family member in preventing falls with the risk of fall of elderly who live in Pondok Karanganom Klaten

METHOD

Method used in this research was cross sectional design. The population is all family who live with their elderly, which around 145 families. Sample size was 57 family members chosen with simple random sampling. Instruments used were questionnaires to assess knowledge and behavior of the family, and Morse Falls Scale (MFS) to assess the risk of falls of the elderly. In questionnaire about knowledge , family were asked 30 questions about knowledge related to falls prevention program, which are consist of the definition of fall, cause of falls, environment factors, physical condition of the elderly and physical activity of the elderly. Questionnaire about behavior consist of 30 questions with 5 range answers from never to always. The question blue prints were about physical condition, psychological condition, physical activity, nutrition and environment. Both questionnaires validated using Microsoft excel, that shows all the question were valid because R count is bigger than r table, and reliability test using alpha Cronbach. This research got ethic approval from Faculty of medicine and health sciences ethic committee. Data analysis is using spearman rho correlation test.

RESULT

Demographic findings

Of fifty-seven respondent, more than half were female (54%) and majority in an age group of 45-54 years-old (49.1%). Senior high school graduates were the biggest part among all (45.6%), also almost one third works as self-employed (31.6%) and 80 % were the children of the elderly.

Tabel 1. Demographic data

Characteristic	Frequency	Percentage (%)
Age 15-24 years-old	3	5.3

25-34 years old	7	12.3
35-44 years old	19	33.3
45-54 years old	28	49.1
Sex		
Male	26	45.6
Female	31	54.4
Level of education		
Bachelor degree	14	24.6
Senior high school	26	45.6
Junior high school	6	10.5
Elementary school	3	5.3
No formal education	8	14
Occupation		
Labor	13	22.8
Worker	8	14
Student	1	1.8
Farmer	1	1.8
Government employee	10	17.5
Not working	6	10.5
Self-employed	18	31.6
Relationship		
Children	46	80.7
Grand children	3	5.3
Son/daughter in law	8	14

Knowledge, behavior and fall risk of the elderly

Knowledge of the respondent regarding falls prevention is all good (100%)(see Table 2), while behavior aspect related to falls prevention give more various result, 48 respondent (84.2%) has good behavior and the rest (15.2%) has average behavior with no respondent with poor behavior (see table 3). The result of risk fall assessment in elderly is just slightly different for each group, but the highest percentage is in high risk group (36.8%) (see table 4).

Table 2. Family Knowledge about Fall Prevention

No	Knowledge	Number	Percentage (%)
1	Good	57	100
2	Average	0	0
3	Low	0	0

Table 3. Family Behavior Related Fall Prevention

No	Behavior	Number	Percentage (%)
1	Good	48	84.2
2	Average	9	15.8

| 3 | Poor | 0 | 0 |

Table 4. Risk of Fall of the elderly

No	Risk fall	Number	Percentage (%)
1	No risk	17	29.8
2	Low risk	19	33.3
3	High risk	21	36.8

Correlation between variables

After analyzed using spearman rho correlation test, there is no correlation between family knowledge and elderly risk of fall (see table 5) (p 0.323 > 0.05). Table 6 shows that respondent with good behavior of falls prevention but have elderly with high risk of falls been 17 respondents (29.8%). Analyzed with spearman rank resulting significance 0.01 ($p < 0.5$). That result shows there was correlation between behavior of falls prevention and risk of falling with the correlation score is 0.340 (moderate correlation).

**Table 5. Correlation between family knowledge with elderly risk of fall
at Pondok Karanganom village Klaten**

	Knowledge					
	Good	Average	Poor	Total	r	P
No risk	17 (29.8%)	0 (0%)	0 (0%)	17 (29.8%)		
Low risk	19 (33.3%)	0 (0%)	0 (0%)	19 (33.3%)	0.133	0.323
High risk	21 (36.8%)	0 (0%)	0 (0%)	21 (36.8%)		
Total	57 (100%)	0 (0%)	0 (0%)	57 (100%)		

**Table 6. Correlation between family behavior with elderly risk of fall
at Pondok Karanganom village Klaten**

	Behavior					
	Good	Average	Poor	Total	r	P
No risk	15 (26.3%)	2 (3.5%)	0 (0%)	17 (29.8%)		
Low risk	16 (28.1%)	3 (5.3%)	0 (0%)	19 (33.3%)	0.340	0.01
High risk	17 (29.8%)	4 (7%)	0 (0%)	21 (36.8%)		
Total	48 (84.2%)	9 (15.8%)	0 (0%)	57 (100%)		

DISCUSSION

The level of knowledge related to the prevention of falls is very good, this could be due to the respondent's educational level is an average high school graduate (45.6%), so the respondent eager to find information about fall prevention and since they well educated they easily accept new information.

Although all families have good knowledge, but 15.8% of them had average behavior related to fall prevention. It is related to the occupation of respondents who mostly work outside the home, so that the elderly cannot monitored all the time.

The risk of falls in the elderly in this study is quite high; it is because of two factors. The first factor is the health condition of the elderly themselves, as much as 52% of the elderly have more than one chronic disease, and the second factor is the environment, due to economic constraints, families are less able to provide a safe home for the elderly.

This study shows that a good knowledge not necessarily guarantee good behavior. This in line with Ryan (2009) that suggest that knowledge alone is insufficient to modify behaviour and that social facilitation and providing self-regulation skills and ability is required to put knowledge into action (Ryan, 2009).

Twenty-one elderly (36.8%) in Pondok Karanganom have a high risk of falling. Analysis of each item of MFS indicate that 40.4% of the elderly had a history of falling in the last 3 months, and more than half (52.6%) of them had more than one chronic ilness. Most of the elderly were falling due to dizziness as the effects of hypertension. Hypertension diseases occupy the first position in the county Klaten with a percentage of 90.8% with the number of 81 697 people in all ages . According to Miller (2004) increased risk of fall in the elderly are related to several factors, namely age, pathological conditions and environmental factors.

The risk of falling is high also because the family cannot fully provide a safe environment for the elderly due to low socioeconomic status. This is evidenced by a home environment that is still dangerous for the elderly, such as slippery floors, lack of grip in the shower, lots of tall ladder that complicate the elderly, still found objects scattered on the floor of the house and the lighting is still lacking for the elderly, because most of the lighting for the elderly in the village still use the yellow bulb. Although the majority of respondent is working self-employed, they only focus to meet their daily basic need but cannot afford for home renovation.

This is in line with research conducted by Jamebozorgi et al. (2013) with the title "Investigation of the Prevalent Fall-Related Risk Factors of Fractures in Elderly Referred to Tehran Hospitals", which explains that the unfavorable environment is one cause of falls in the elderly. In addition to the environment, the risk of falling in the village are high also due to the factor of the elderly themselves, the health of the elderly is declining. Most of the elderly village has a secondary diagnosis or co-morbidities in the elderly are hypertension with a percentage of 52.6%. This

bring challenge for the nurse and other health service provider to find affordable innovation for low income elderly.

CONCLUSION

Falls in the elderly affected by many factors and the nurse should be able to examine comprehensively and provide appropriate interventions to prevent falls in the elderly at the community level. This fall prevention program should also involve family members, as the primary caregivers of the elderly. Family members need to be equipped not only with knowledge but also skills, and facilitated in order to take steps to prevent falls effectively and comprehensively to the elderly.

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