FALL PREVALENCE AMONG ELDERLY LIVING IN KG. LONDANG, MASJID TANAH, MALACCA

NURAMNANI BINTI SHAHRIN
27725

This project is submitted in partial fulfillment of the requirement for the degree of Bachelor of Nursing with Honours

Faculty of Medicine and Health Sciences
UNIVERSITI MALAYSIA SARAWAK
2012
ABSTRACT

A cross-sectional design has been used as the respondents were examined at one point of time by assessing the prevalence of fall among the elderly in Kampong Londang, Masjid Tanah, Malacca. In addition, the study also examine the differences between the prevalence of falls with age, gender, marital status, educational level, living arrangement, medical condition or diseases, and functional. A total of sixty respondents ranging in age from 60 to 101 years were selected using a simple random method from the list of villagers given by the village head. The respondents were interviewed via face-to-face approaches using structured questionnaire as a survey tool. The findings showed that the mean age of the respondents was 70.17 years. Visions problems (73.3%) were the commonest medical condition or diseases reported by the respondents, followed by hypertension (66.7%), heart diseases (51.7%), diabetes mellitus (50.0%), hearing problems (11.7%), arthritis (6.7%), and stroke (3.3%). Majority of the respondents reported having more than one medical condition or diseases and had at least once incidence of fall during the previous one year. Further findings indicated that 73.3% of the respondents were independent and had experience of fall at least once. The other 10 respondents (16.7%) required assistance from others in performing at least one of the activities of daily living. The findings from this study provide information to primary health care personnel to plan
appropriate intervention program. The purpose of the intervention program is to decrease the prevalence of falls and associated risk factors that influences the functional status, in enhancing the quality of life among elderly through health education.
ACKNOWLEDGEMENTS

First and foremost, I would to extent my deepest gratitude to ALLAH S.W.T for standing lovingly by me throughout my studies. HE has blesses me with endless gifts of endurance and faith. Nursing is very challenging and life enriching course especially for a person like me. All trials are bound and opportunity for me to pursue bachelor of Nursing in Universiti Malaysia Sarawak but they have shape me into a better person. I am truly thankful for everything that has happened.

Without any contribution from significant people, this research could not been completed at the time given. Thus, I would like to express my sincere gratitude to my supervisor, Dr. Sidiah John Siop for her support, patience, and generous in spend time in guiding me throughout the process in completing this research. I am grateful to the Research Ethics Committee of Faculty of Medicine and Health Sciences, Universiti Malaysia Sarawak that had approved me to conduct this research. I am also grateful to the representatives and residents of Kampong Londang, Masjid Tanah for their willingness in participating in this research. I am further in-depthly grateful to Mrs. Norlela bte Md Jidin and Mrs. Latipah bte Ahmad for their help in accompanied me to do data collection. Without them, I am surely could not complete this research.
Thanks also to Mrs. Khalipah bte Md Jidin, Nooraziah bt Ismail, Chen Ai Ling, and Foong Hui Foh for their help in my data coding and analysis as well.

I am also indebted thankful to my beloved family; Mr. Shahrin b Che Mat, Mrs. Jariah bte Md Jidin, and Nuramirah binti Shahrin for their wonderful support and encouragement from the beginning until this research completed. Special thanks to Mohd. Hafizi b. Mohd. Yusof for his companionship and support for all this while.
# TABLE OF CONTENTS

<table>
<thead>
<tr>
<th>Section</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Abstract</td>
<td>i</td>
</tr>
<tr>
<td>Acknowledgements</td>
<td>iii</td>
</tr>
<tr>
<td>List of Tables</td>
<td>viii</td>
</tr>
<tr>
<td>List of Figures</td>
<td>ix</td>
</tr>
<tr>
<td>Introduction</td>
<td>1</td>
</tr>
<tr>
<td>Study Background</td>
<td></td>
</tr>
<tr>
<td>Problem Statements</td>
<td></td>
</tr>
<tr>
<td>Research questions</td>
<td></td>
</tr>
<tr>
<td>Research Objectives</td>
<td></td>
</tr>
<tr>
<td>v</td>
<td></td>
</tr>
</tbody>
</table>
Significant of the research

Operational Definition of Terms

Review of Literature .................................................. 9

Prevalence of fall among elderly

Associated risk factors of falls among elderly

Methodology ................................................................. 19

Research Design

Setting and Population

Sampling Method

Ethical Consideration

Data Collection

Instrument

Data Analysis
Results ........................................................................................................24

Socio-demographic Characteristics

Self- Reported Medical Condition or Diseases

Functional Status

Frequency of fall

Incidence or Places of fall

Differences between Variables and Prevalence of fall

Discussion ...................................................................................................41

Conclusion ..................................................................................................48

References .................................................................................................49

Appendices .................................................................................................57
## LIST OF TABLES

<table>
<thead>
<tr>
<th>Tables</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Socio-demographic characteristics of the respondents</td>
<td>26</td>
</tr>
<tr>
<td>2. Self-reported medical conditions or diseases of the respondents</td>
<td>27</td>
</tr>
<tr>
<td>3. Functional status of the respondents</td>
<td>31</td>
</tr>
<tr>
<td>4. Percentage distribution of prevalence of fall with age, gender, marital status, educational level, and living arrangement</td>
<td>36</td>
</tr>
<tr>
<td>5. Percentage distribution of prevalence of fall with self-reported medical condition or diseases</td>
<td>38</td>
</tr>
<tr>
<td>6. Percentage distribution of prevalence of fall with number of self-reported medical condition or diseases</td>
<td>39</td>
</tr>
<tr>
<td>7. Percentage distribution of prevalence of fall with functional status</td>
<td>40</td>
</tr>
</tbody>
</table>
# LIST OF FIGURES

<table>
<thead>
<tr>
<th>Figures</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Number of medical conditions or diseases of the respondents</td>
<td>28</td>
</tr>
<tr>
<td>2. Functional status of the respondents</td>
<td>32</td>
</tr>
<tr>
<td>3. Frequency of fall of the respondents</td>
<td>33</td>
</tr>
<tr>
<td>4. Incidence or places of fall occur of the respondents</td>
<td>34</td>
</tr>
</tbody>
</table>
INTRODUCTION

Study Background

The increment of life expectancy and the decrement in fertility rate globally have resulted in the rapid growth of population (Kim, 2009). According to World Health Organization (2011), it is estimated that worldwide population of people aged 60 and over is about 600 million. This figure will be doubled by 2025 and will increase to about two billion by 2050. More importantly, about two thirds of elderly in the developing countries will be less prepared to confront the challenges of the rapidly ageing societies (WHO, 2011).

Similar to other countries, the ageing population in Malaysia is a result of declining fertility, falling mortality rates and improvements in the health system (Ambigga, Ramli, Suthahar, Tauhid, Clearihan, & Browning, 2011). The number of Malaysians aged 60 years and above is estimated to be 1.4 million and is predicted to increase to 3.3 million in the year 2020 (Mafauzy, 2006).
Mafauzy (2006) stated that, the increase in the proportion of aged group is associated to the increasing in prevalence of morbidity. Physical and social changes together with debilitating effects of multiple, acute and chronic illnesses come with ageing. Multiple pathologic resulting in multiple symptoms was thus common in the elderly, such as urinary incontinence, instability, falls, and acute confusion states.

‘Falls are commonly defined as “inadvertently coming to rest on the ground, floor or other lower level, excluding intentional change in position to rest in furniture, wall or other objects” (WHO, 2011). Falls in elderly people have always been a major health issues (Colledge, 2002). The increment number of falls among elderly can be expected as our population age increase (Stevens, 2002). Blake, Morgan, Bendall, Dallosso, Ebrahim, Arie, et. al. (1988) noted that each year approximately 30% of people aged 65 years living at home had a fall and about 15% of them had recurrent falls. According to Mertz, Lee, Sui, Powell and Blair (2010), the incidence of fall among elderly increased with age and among women than among men. Most of the fall incidence reported multiple falls in the past year. In the other study by Fletcher and Hirdes (2002) reported that, fall incidence are interrelated with increasing in age, among women, widowed, secondary education or less, and for those who lived alone. In another study, the prevalence of fall was related with medical conditions or diseases, number of diseases, and functional status among elderly (Scheffer, Schuurmans, Dijk, Hooft, & Rooij, 2008).
Problem Statements

Ageing is a dynamic biological process which is beyond human control (Gorman, 2000). Numerous studies have been conducted on the causes of falls among elderly including combination of ‘intrinsic’ factors (e.g. age, medical conditions or diseases, number of medication taken), and ‘extrinsic’ factors (e.g. environmental factors), (Akyol, 2007; Cesari, Landi, Torre, Onder, Lattanzio, & Bernabei, 2002; Ho, Woo, Chan, Yuen, & Sham, 1995) which contribute to the risk of falls.

‘Falling’ covers a wide range of problems, from apparently minor trips and slips events causing serious and sometimes life – threatening injuries (Downton, 1993). Todd and Skelton (2004) reported that, approximately 30% of people over 65 falls each year, and the prevalence of fall rate for those over 75 are higher. In addition, about 20% and 30% of those who fall suffer injuries that reduce mobility and independence, and the risk of premature death. Between 30% and 50% of elderly annually falls at home which caused injuries such as disabilities to the elderly to continue their activity of daily living (Davies, & Kenny, 1996; Richardson, Bexton, & Shaw, 1997).
In a study done by Rizawati and Mas Ayu (2008) among elderly in Malacca, 74.5% had experienced one episode of fall, 12.8% had two episodes of falls and another 12.8% had three and more falls in one year. The authors also stated that, falls had other consequences besides injuries which are long periods of bedridden and fear of falling were common that needed further interventions.

Sazlina, Krishnan, Shamsul, Zaiton, and Visvanathan (2008); and Sazlina (2005) found that, the prevalence of falls was 47.0% among elderly who attended a primary care clinic in Kuala Lumpur, Malaysia. About 57% reported experiencing recurrent falls. Majority (61%) of falls occurred in the home and the two most common places were the bathroom (27%) and stairs (27%). Among those who fell, 43 (60.6%) suffered injuries, and of these, almost two thirds required medical attention and for those with injuries, almost one fifth sustained fractures and required hospitalisation. About 11% of the elderly patients reported impairments in their activities of daily living (such as mobility, washing, grooming, toileting and feeding) as a result of the fall. This will give impact to the elderly which will affect their activities of daily living and fear of falling.
There are several studies done in Malaysia in assessing the prevalence of falls among elderly. Therefore, it is with this in mind that this study had undertaken to help in assessing the prevalence of falls amongst the elderly since there is a lack of awareness in our society regarding the risk factors associated with falls which affect their activities of daily living.

**Research Questions**

The research questions are as follow:

1. What is the prevalence of falls among elderly at Kampong Londang, Masjid Tanah, Malacca?

2. Are there any age, gender, marital status, educational level, and living arrangement differences with the prevalence of fall among elderly at Kampong Londang, Masjid Tanah, Malacca?

3. What is the prevalence of fall with medical conditions or disease among elderly at Kampong Londang, Masjid Tanah, Malacca?

4. What is the prevalence of fall with functional status among elderly at Kampong Londang, Masjid Tanah, Malacca?
Research Objectives

General Objectives

The purpose of this study is to assess the prevalence of falls among the elderly at Kampong Londang, Masjid Tanah, Malacca. This study also examined any differences between age, gender, marital status, educational level, living arrangement, medical conditions or diseases, and functional status with the prevalence of falls among the elderly at Kampong Londang, Masjid Tanah, Malacca.
Specific Objectives

1. To assess the prevalence of fall among elderly at Kampong Londang, Masjid Tanah, Malacca.

2. To examine any differences between the prevalence of fall with age, gender, marital status, educational level, living arrangement, medical conditions or diseases, and functional status among elderly at Kampong Londang, Masjid Tanah, Malacca.

3. To examine any differences between the prevalence of fall with medical condition or disease among elderly at Kampong Londang, Masjid Tanah, Malacca.

4. To examine any differences between the prevalence of fall with functional status among elderly at Kampong Londang, Masjid Tanah, Malacca.
Significance of the Study

Studying the prevalence of falls and differences between the prevalence of fall with age, gender, marital status, educational level, living arrangement, medical conditions or diseases, and functional status among the elderly could be identified to encounter the problems. The findings of this study will provide information to the elderly, community and health care professionals about the prevalence of fall that affect the elderly functional status. Besides that, the intervention programs can be plan to provide health promotion among elderly, by decreasing the occurrence of falls and improving their activity daily livings without depend on others.

Operational Definition of Terms

Falls

Falls is defined as an unintentional event that results in elderly to rest on ground or on another lower level (Adapted from Newton, 2003).

Elderly

Elderly is defined as a person aged 60 years and above.
REVIEW OF LITERATURE

There are quite a number of cross-sectional and longitudinal studies in relation to the differences between the prevalence of fall with age, gender, marital status, educational level, living arrangement, medical conditions or diseases, and functional status among elderly. A review of literature regarding the prevalence of fall and differences with age, gender, marital status, educational level, living arrangement, medical conditions or diseases, and functional status is presented in the following paragraphs.

Prevalence of falls among elderly

The incidence of falls among elderly aged 65 and over had been reported in every one of three elderly which resulted in moderate to severe injuries and increased risk of death (Centres for Disease Control and Prevention, 2010). This ratio had been used in a study done by Reyes – Ortiz, Snih, and Markides (2005) as their guideline. The investigators examined data from SABE (The Health, Well-Being and Aging in Latin America and the Caribbean Multicenter Study) and H – EPESE (Hispanic Established Population for the Epidemiological Study of the Elderly) to estimate the prevalence and risk factors for falls among community dwelling elders in Latin America and the Caribbean and among the elderly Mexican – Americans in the south western United
States. The overall prevalence of falls from the seven SABE cities and the H – EPESE ranged from 21.6% in Bridgetown, Barbados; to 34% in Santiago, Chile. The significant independent risk factors which had been identified in this study were female, increased age, high depressive symptoms, and had any functional limitation.

Another study done by Hong, Cho and Tak (2010) assessed the incidence of falls and risk factors among Koreans aged 45 years and older. This study was conducted in 2006 as a longitudinal study of ageing with a total of 10254 respondents who had been randomly selected. The incidence of falls (4.0%) increased with increasing age (65 years and over). The incidence of falls that occurred among elderly are those with arthritis, visual deficits, cognitive impairments, depression and those with difficulties in activities of daily living. This study findings is similar with a study by Stevens (2002) that reported, the increment of age among elderly were related with increased in the number of falls.

A study by Rizawati and Mas Ayu (2008) examined whether the home environment was a risk factor for falls that occur at home among elderly in the Masjid Tanah community, Malaysia. It was a cross – sectional study conducted from early June 2006 until May 2007 in six randomly selected villages. The response rate was 50.5% (n = 516) in this study. The prevalence of falls among respondents was 27.3% and home falls accounted for 66.7% of the total falls.
In another study done by Sazlina, Krishnan, Shamsul, Zaiton and Visvanathan (2008), the prevalence and the pattern of falls in the community dwelling older people attending a primary care clinic in Kuala Lumpur, Malaysia were investigated. This cross sectional study was conducted in an urban primary clinic with total of 151 respondents. There was 72% response rate in this study. This study was conducted over a 3 – month period in 2004 by using a structured questionnaire in assessing socio-demographic variables, medical and falls history. The prevalence of falls was 47.0% in the previous 12-months period. About 57% reported experiencing recurrent falls. Majority (61%) of falls occurred in the home and the two most common places were the bathroom (27%) and stairs (27%). Sixty-one percent of elderly, who fell, sustained an injury and most sought medical attention. This study concluded that falls are common amongst older people attending this primary care clinic and it occurred commonly in the home in the bathroom and near stairs.
Associated risk factors of falls among elderly

Age

In a study done by Kannus, Niemi, Palvanen, and Parkkari (2005), about rising incidence of fall-induced injuries among elderly adults involved elderly aged from 80 years and above. The authors found that the increment of age was related with the number of fall-induced injuries in elderly Finns between the years 1970 to 2002: from 1,139 to 11,835.

Casteel, Peek-Asa, Laesamana, Vazquez, and Kraus (2004) conducted an evaluation of a falls prevention program for independent elderly involving 950 respondents aged 60 years and above who experienced the incidence of falls. The purpose of this study was to evaluate the effectiveness of older adult fall prevention program and compliance with the program. The findings of this study reported that, about 90% of the respondent had increment in age starting with the age of 65 years and above who had history of falls.
Gender

Stevens, Corso, Finkelstein, and Miller (2006), reported that women has higher incidence of fall nearly 20% compared with men and required more medical costs for fatal and non-fatal fall injuries. The purpose of their study was to estimate the incidence and direct medical costs. The assessments used the 1999 Medical Expenditure Panel Survey (MEPS) questionnaires.

In another study, Coutinho, Fletcher, Bloch, and Rodrigues (2008) examined risk factors for fall related to severe fractures in those aged 60 or more in a middle-income country. The study reported that, about 78% of the respondents had fall incidences were among women. Similarly, Bartlett, Abrahamowicz, Grad, Sylvestre, and Tamblyn (2009) reported that more than 50% of women had the incidence of fall. However, in a study done by Ntagungira (2005) based on 195 participants, 127 (63.5%) were males and 73 (36.5%) were females. The study reported that males has higher incidence of fall compared with females which accounted for 82%.
Marital status

Marital statuses were found to affect fall among elderly. Fletcher and Hirdes (2002), investigated the risk factors for falling amongst elderly in a community at Ontario, Canada. The purpose was to determine the risk factors for non-fallers versus fallers (10 falls), and for non-fallers versus recurrent fallers (20 fallers) among seniors using home care services. The result of the study found that the prevalence of fall are higher in widowed elderly rather than in married elderly.

In another study by Shumway-Cook, Ciol, Hoffman, Dudgeon, Yorkton, and Chan (2009), the increased incidence of fall were among women, white non-Hispanic participants, and participant’s who were not married, had lower education, and were living alone.

Educational level

Salvá, Bolíbar, Pera, and Arias (2004) conducted a population-based prospective study involving 448 elderly community-dwellers, aged 65 or more living in the city of Mataró (Spain). The purpose of this study was to evaluate the incidence of falls according to socio-demographic and health factors, and to determine their physical, psychological and social consequences. One of the questions that have been asked