

Associated Factors of Long-Term Disabilities among the Elderly in Catchment Area of a Primary Care Unit, Nakhon Ratchasima

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Objectives: Our objectives were to determine the prevalence of long-term disabilities and common chronic conditions, associated with the disabilities and to set priority of the problems. **Methods:** Between December 2002 and January 2003, the cross-sectional study was conducted in catchment area of a primary care unit (PCU), Nakhon Ratchasima province. A long-term disability was defined as any restriction or lack of ability from medical conditions more than 6 months. Participants aged 60 years and older were selected by two-stage, stratified, random cluster sampling and were interviewed with a standardized questionnaire. The associated factors were analyzed and population attributable risk fractions (PARF) were calculated. **Results:** Eighty-one of 316 (25.6%) of Thai elderly people had the long-term disabilities. The common chronic conditions found with the long-term disabilities were knee pain/osteoarthritis (34.4%), back pain (23.3%), and cataract/poor vision (19.3%). The elderly with knee pain/osteoarthritis (odds ratio (OR) 2.68, 95% confidence interval (CI) 1.51, 4.74) or cataract/poor vision (OR 2.25, 95%CI 1.19, 4.24) or back pain (OR 2.19, 95%CI 1.15, 4.16) were associated with the long-term disabilities. The PARF of knee pain/osteoarthritis, back pain, and cataract were responsible for 36.6%, 21.7%, and 19.4% of the long-term disabilities, respectively. **Conclusion:** Knee pain/osteoarthritis accounted for the long-term disability among Thai elderly people. The results were similar to international findings and guided the prioritization of appropriate public health interventions in the catchment area of the PCU.

Key words: Long-term disability, Prevalence, Associated factor

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บทคัดย่อ: ปัจจัยที่เกี่ยวข้องกับการเกิดทุพพลภาพระยะยาวในผู้สูงอายุ เขตพื้นที่ศูนย์สุขภาพชุมชนแห่งหนึ่ง จังหวัดนครราชสีมา

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วัตถุประสงค์: ดำรวจอัตราความชุกภาวะทุพพลภาพระยะยาวและสภาวะโรคเรื้อรัง ระบุปัจจัยที่เกี่ยวข้องกับภาวะทุพพลภาพและจัดลำดับความสำคัญของปัญหา **วิธีการศึกษา:** การศึกษาเชิงสำรวจ ทุพพลภาพระยะยาวคือการขาดหรือมีข้อจำกัดของความสามารถในการดำรงชีวิตจากความเจ็บป่วยมากกว่า 6 เดือน กลุ่มตัวอย่างเป็นผู้สูงอายุ ≥ 60 ปี ถูกคัดเลือกโดยวิธี two-stage, stratified, random cluster sampling และใช้แบบสัมภาษณ์มาตรฐาน คำนวณ Odds ratio (OR) และ 95% confidence interval (95%CI) และสัดส่วนอัตราเสี่ยงกระทบ **ผลการศึกษา:** อัตราความชุกทุพพลภาพระยะยาวเท่ากับร้อยละ 25.6 (81/316) สภาวะความเจ็บป่วยที่พบบ่อยและเกี่ยวข้องกับทุพพลภาพระยะยาวคือ ปวดเข่า/ข้ออักเสบ (ร้อยละ 34.4) ปวดหลัง (ร้อยละ 23.3) และ ต้อกระจก/ตามัว (ร้อยละ 19.3) ปวดเข่า/ข้ออักเสบสัมพันธ์กับการเกิดทุพพลภาพระยะยาวมากที่สุด (OR 2.68, 95% CI 1.51, 4.74) รองลงมาคือ ต้อกระจก/ตามัว (OR 2.25, 95%CI 1.19, 4.24) และปวดหลัง (OR 2.19, 95%CI 1.15, 4.16) สัดส่วนอัตราเสี่ยงกระทบในกลุ่มปวดเข่า/ข้ออักเสบเท่ากับ ร้อยละ 36.6 รองลงมาคือปวดหลัง ร้อยละ 21.7 และ ต้อกระจก/ตามัว ร้อยละ 19.4 **สรุป:** ปัจจัยที่สัมพันธ์กับภาวะทุพพลภาพระยะยาวในผู้สูงอายุคือ ปวดเข่า/ข้ออักเสบ สอดคล้องกับผลการวิจัยในต่างประเทศ ควรใช้ข้อมูลนี้เป็นแนวทางในการวางแผนป้องกันทุพพลภาพในเขตพื้นที่ศูนย์สุขภาพชุมชน

Introduction

Disability has been recognized as a public health problem in developed countries due mostly to the substantial rise in the elderly population in recent decades.⁽¹⁾ The association between disability and this population groups is attributable to the natural process of aging, which leads to worsening health and decreasing functional status.⁽²⁾ This decline is generally associated with increased demands on the health care system. Musculoskeletal pain symptoms and arthritis were reported as the major causes of disability in the developed

world.⁽³⁻⁶⁾

In 2002, approximately 16.2% of the Thai populations in a catchment area of a primary care were seniors, 60 years of age and older. Hypertension and diabetes were common clinical encounters. However, little information is available on long-term disabilities.

The objectives of this study were to determine the prevalence of long-term disabilities and common chronic conditions, to identify associated factors for the disabilities and to set priority of the problems.

Methods

Definition

According to Jitapunkul et al on Thai National Health Survey II⁽⁷⁾, a long-term disability was defined as any restriction or lack of ability from medical conditions more than six months. Two questions were used to identify those subjects with long-term disability assessed in terms of activity limitation: ‘Have you had any condition or health problem for 6 months or longer?’ and ‘Does it prevent or limit you in the kind or amount of activity you can do?’ A positive response to both of these questions was defined as long-term disability.

Data collection and statistical analysis

From December 2002 through January 2003, a cross-sectional survey was conducted. Study subjects were selected by two-stage, stratified, random cluster sampling. Firstly, clusters were stratified by size of population and place of residence. Subsequently, individual households were selected at random in each cluster. They were interviewed with a standardized questionnaire by trained medical students and nurses.

Proxies were only used when the selected subjects were unable to answer by themselves, usually due to their high level of disability. This situation affected 14 subjects (7%) in the study sample. A total of 316 subjects were analyzed. Analysis of the association between disability and the variables of interest was performed. The associated factors were analyzed by using chi-square test, odds ratio and 95% confidence interval. Population attributable risk fractions (PARF) were calculated by using the equation⁽⁸⁾: $PARF = P(OR-1)/1$ where P is the prevalence of a medical condition and OR is the odds ratio associated with the medical condition.

Results

Twenty five point six percent or one-fourth Thai elderly people had the long-term disabilities. Disabilities were greater in older age groups and were more prevalent among women than men. The long term disabilities were significantly associated with increasing age (Table 1).

Figure 1 showed the most common chronic condition in elderly was hypertension (35.6%). It was followed by knee pain and osteoarthritis (34.4%), back pain (23.3%), cataract and poor vision (19.3%), injuries (16.8%), and diabetes (15.8%), respectively.

Table 1 Rate/100 of socio-demographic of elderly people

Characteristics	Long term disability (n=81)	No long term disability (n=235)
Sex		
Male	20.5	79.5
Female	29.1	70.9
Age groups*		
60-69	19.8	80.2
70-79	27.7	72.3
80+	45.7	54.3
Reading ability		
Fluent	21.7	78.3
Not-fluent	34.3	65.7
Cannot	46.9	53.1
Financial problems		
Usually	37.5	62.5
Sometimes	32.0	68.0
Occasional	29.8	70.2
Never-rare	20.5	79.5
Total	25.6	74.4

*p<0.05

Table 2 Associated factors of long-term disabilities

Condition	OR	95%CI
Knee pain/OA	2.68	1.51, 4.74
Cataract/poor vision	2.25	1.19, 4.24
Back pain	2.19	1.15, 4.16
Diabetes mellitus	1.91	0.90, 4.04
Injuries	1.63	0.82, 3.22

However, three medical conditions - knee pain and osteoarthritis, cataract, and back pain-were associated with the long-term disabilities. The odds of developing a long-term disability were 2.68 times higher among those who had knee/pain/OA than those who had not, 2.25 among those who had cataract, and 2.19 among those who had back pain (Table 2).

The population attributable risk fractions of knee pain and osteoarthritis, back pain, and cataract/poor vision were responsible for 36.6, 21.7 and 19.4 percent of the long-term disabilities, respectively (Table 3).

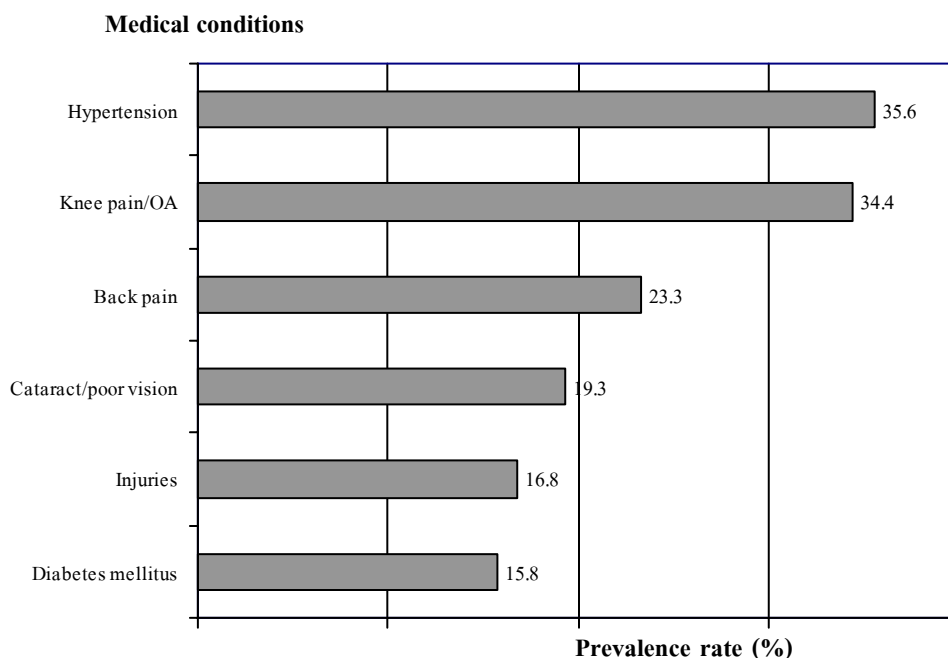
Table 3 Population attributable risk (PAR) fractions of medical conditions in the elderly with disabilities

Condition	PAR%	Rank
Knee pain/OA	36.6	1
Back pain	21.7	2
Cataract	19.4	3

Discussion

The result of this prevalence survey was consistent with the Thai National Health Survey II in 1997 in which long-term disabilities affected a quarter of Thai people over 60 years.⁽⁷⁾ More women might be at higher risk of developing severe disability than men in the advanced age because of the longer survival of women with slight disability earlier in adult life.⁽⁹⁾

Our findings were consistent with previous studies in other countries. Age and knee pain/osteoarthritis were risk factors of long-term disabilities.⁽³⁻⁶⁾ Although hypertension was highly prevalent, it was not significantly

**Figure 1** Prevalence rates of medical conditions in the elderly

associated with long-term disability among Thai elderly. The reasons might be they were asymptomatic and did not have limitations of daily activity life. We also could not detect the association between cardiovascular diseases and disability as found in Finns' study in which cerebrovascular diseases in men while myocardial infarction, heart failure, and cerebrovascular diseases in women were significantly associated with disability.⁽¹⁰⁾ Generally, comparison with previous studies is hampered by differences in the age range of the study population, the definition of disability and the tools used to measure disability.

The strength of this study is that it is the first population-based survey in catchment area of the primary care unit. It has been evidence that lack of regular vigorous physical activity is a potentially modifiable risk factor that could substantially reduce functional decline and associated health care costs.⁽¹¹⁾ Prevention/intervention programs should include regular vigorous physical activity, weight maintenance and medical intervention for health needs. Population-based health promotion and prevention programs for knee pain/osteoarthritis are needed.

There were three limitations of the study. Firstly, chances of misreporting of information by the respondents might increase with age and vary greatly with the disease considered. Secondly, there was lack of information about mental health problems which might not be severe enough to limit self-care but could contribute to burdens on families and the health care system.⁽⁷⁾ Thirdly, because data on height and weight were not available for all subjects, the relation between body mass index and functional limitations was not explored.⁽¹²⁾

Conclusion

Knee pain/osteoarthritis accounts for the long-term disability among Thai elderly people. The results are similar to international findings and guide the prioritization of appropriate public health interventions in the catchment area of the primary care unit. Knee pain/osteoarthritis prevention and health promotion programs should be implemented.

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