A Randomised Controlled Trial of Regular Surveillance in Thai Elderly Using a Simple Questionnaire Administered by Non-professional Personnel

SUTTHICHAI JITAPUNKUL, M.D., M.Sc.*,

Abstract

To test the benefits of regular surveillance of the elderly at home using a simple-questionnaire, 142 randomly selected subjects aged 70 years or over and living in a slum area of Bangkok were recruited and were designated as cases (n = 70) and controls (n = 72). At the beginning of the study period all subjects were visited and their characteristics, including morbidity data, activities of daily living (Barthle ADL Index, Chula ADL Index) and number of falls during the last three months, were collected. Over three years the cases were visited every three months, in their own home, by non-professional personnel. They and/or their care-givers were interviewed using a short questionnaire designed for the home visiting programme. The elderly who had problems according to the criteria were visited and assessed by nurses and/or a geriatrician. Appropriate management was provided to these elderly. After three years, all subjects were visited and outcome data were collected. Rates of service use among the cases were higher than among the controls but there was not a statistically significant difference. The rate of declining in Chula ADL Index score of the cases was significantly less than that of the controls. ($p < 0.05$) There was no statistically significant difference between other main outcomes of the case and control groups. However, regular home visiting of old people at home by non-professional personnel using a simple questionnaire is a practical way for community care of the elderly population living in poor areas.

As the numbers of very elderly people (age 70 years or over) in the population increases so does the responsibility of health and social services to deal with the increasing amounts of disability resulting from the increased prevalence of chronic disease in this age group[1-3]. The ideal goal of maintaining elderly people within the community highlights the need for an surveillance to identify high risk elderly and to offer successful intervention. A limited number of studies in Western countries have been conducted and showed some benefits in having a surveillance pro-

* Department of Medicine, Faculty of Medicine, Chulalongkorn University, Bangkok 10330, Thailand.

gramme[4-6]. However, there has been no report on the efficacy of a surveillance programme for the elderly in Thailand.

Since 1992, comprehensive community care services have been provided to Thai elderly in Klong Toey slum (CES project)[7]. These services include community rehabilitation, home health care, education programme and social care. This project is the first comprehensive community care programme for the elderly in Thailand and has given the opportunity to assess the benefits of a regular surveillance programme. Therefore, we conducted a three year randomised controlled trial. In order to test the benefits of regular surveillance of Thai elderly at home using a short questionnaire designed for the home visiting programme in Klong Toey slum.

SUBJECTS AND METHOD

One hundred and sixty Thai elderly aged 70 and more who had been interviewed in the previous survey[8] were recruited in the study. They were visited and informed about the objective of this study. All of them were willing to participate. These 160 sujects were divided into a case group (n = 80) and control group (n = 80) at random. The study covered three years, from 1 May 1993 to 31 April 1996. At the beginning of the study period, all subjects were visited and interviewed, characteristics and base-line data was collected. The interview was carried out using a structured questionnaire. If the elderly could not provide data, their care-givers were interviewed. Over three years the cases were visited every three months, in their own home, by non-professional personnel. The cases and/or their care-givers were interviewed using a short questionnaire* designed for the home visiting programme. This screening questionnaire includes Barthel ADL Index (BAI)[9], Chula ADL Index (CAI)[8] and fall-surveillance questions. If the BAI and/or CAI scores decline 2 points or more or they fell more than once during the last three months, the home-visit personnel had to report to nurses or a geriatrician who were working in the comprehensive community care services (CES project). Then nurses and/or a geriatrician went to visit these selected elderly. An assessment was done and appropriate action were taken including education, prescribing drugs and/or aids, providing a rehabilitation programme, referring to nearby health centre or hospital, and contacting with or referral to a social service organisation including governmental and non-governmental organisations. The selected cases were visited by professional staff until their problems were solved or their health status was stable.

After three years, all subjects were visited and outcome data were collected. The main outcome data included mortality, Barthel ADL Index score, Chula ADL Index score, falls during the last three months, physician visits during the last three months, hospital admissions during the last three years, rehabilitation received during the last three years, and social services received during the last six months. Changes in Barthel and Chula ADL Index score were computed and also used as the main outcome.

The data were analysed using Mann-Whitney U test, unpaired student's *t* test or chi square test wherever they were appropriate. A 5 per cent level of probability was used to determine significant from non-significant relations. The SPSS PC+ programme was used for statistical analysis.

RESULTS

During the study period, 10 and 8 subjects in the case- and controlled groups respectively moved to live in other places and were excluded from the study. Thus, the final number of cases and controls enrolled in this study were 70 and 72 respectively. Characteristics of the subjects in these two groups are shown in Table 1. There is no statistical difference between characteristics of these two groups.

During the study period, 13 subjects in the case-group (18.6%) and 13 subjects in the controlled group (18.1%) died. Characteristics of the deceased subjects in the case group did not differ from those of the deceased subjects in the control group. At the end of the study period, therefore, 57 subjects in the case group (81.4%) and 59 subjects in the controlled group (81.9%) were visited and interviewed to determine the outcome data of this study. Although there was no statistically significant difference, 5.3 per cent of the subjects in

* A simple screening quesionnaire can be requested directly from the author.

Table 1. Characteristics of all subjects at the begining of the study.

		Cases (n = 70)	Controls (n = 72)
Mean age (SD*)		76.1 (5.9) years	75.1 (5.7) years
% male		31.4	37.5
Marital status	% married	31.4	31.9
	% widowed	65.7	63.9
	% separate	2.9	4.2
Education level	% no formal education	65.7	56.9
	% primary school	32.9	41.7
	% secondary school	1.4	1.4
% literacy		34.3	41.7
Mean duration of stay in the present house (SD*)		25 (13.2) years	23.3 (13.4) years
% live alone		5.7	1.4
% have care-givers during illness		87.1	93.1
Smoking	% ex-smoker	18.6	18.1
	% smoker	12.9	12.5
Alcoholic drinking	% ex-drinker	7.2	11.1
	% drinker	35.7	33.3
Serious chronic diseases (%)		44.3	40.3
	% diabetes mellitus	7.1	4.2
	% hypertension	10	12.5
	% obstructive airway diseases	5.6	5.6
	% major stroke	2.9	4.2
	% dementia	0	0
Use medication at present (%)		41.4	45.8
Use herbals/traditional medicine (%)		55.7	48.6
Fall during the past three months (%)		10	5.6
Visit physician during the past three months (%)		35.7	30.6
Can recognise person at the opposite site of the road (%)		57.1	72.2
Can hear people talking without problem (%)		81.4	79.2
Mean Barthel ADL Index score (SD)		18.5 (3.5)	18.8 (2.1)
Mean Chula ADL Index score (SD)		6.5 (2.7)	6.8 (2.4)

* Standard deviation

the case group fell while 10.2 per cent of subjects in the control group did. The percentage of subjects in both groups who visited medical doctors during the last three months or who were hospitalised during the study period were about the same. Subjects in the case group were more likely to make better use of rehabilitation and social services than subjects in the control group. However, there was no statistically significant difference of service use between these two groups. The cases were more likely to have slower decline in their disability level than the control group. The Barthel ADL Index scores and the Chula ADL Index score of the control subjects declined more rapidly than those of the case subjects. However, the statistical significance of difference was demonstrated only with the change of Chula ADL Index score. ($P < 0.05$) Declining of sum score of Barthel ADL Index and Chula ADL Index of the control group was also more than that of the case group. ($P < 0.05$) Outcome parameters collected from living subjects at the end of the study period are shown in Table 2.

DISCUSSION

This small scale project has shown that regular home visiting of the elderly by non-professional personnel is practical and has an impact on the population visited. The cases received health and social services more than the controls and reported less incidence of falls at the end of the project. Rates of using rehabilitation and social services in the case-group were higher than those in the control-group. Our method of using non-professional personnel and a structured questionnaire provided a low cost way of disability and fall sur-

Table 2. Outcome parameters collected from alive subjects at the end of the study period.

	Cases (n = 57)	Controls (n = 59)
Fall during the last three months (%)	5.3	10.2
Visit physician during the last three months (%)	52.6	50.8
Hospital admission during the study period (%)	28.1	30.5
Rehabilitation programme during the study period (%)	33.3	20.3
Number of rehabilitation programme during the study period - mean (standard deviation)	0.56 (1.2)	0.34 (0.8)
Social services received during the last six months (%)	15.8	10.2
Number of social services received during the last six months - mean (standard deviation)	0.54 (1.7)	0.22 (0.9)
Mean Barthel ADL Index score at the beginning of the study period (SD)	18.6 (3.7)	18.9 (2.1)
Mean Chula ADL Index score at the beginning of the study period (SD)	6.8 (2.4)	7.1 (2.3)
Mean Barthel ADL Index score at the end of the study period (SD)	17.3 (3.6)	17.1 (2.7)
Mean Chula ADL Index score at the end of the study period (SD)	5.5 (2.7)	4.9 (2.4)
Mean of difference between Barthel ADL Index score at the beginning and the end of the study period (SD)	1.3 (1.6)	1.8 (1.7)
Mean of difference between Chula ADL Index score at the beginning and the end of the study period (SD)*	1.4 (2.1)	2.2 (2.4)
Mean of difference between the sum score (Barthel ADL Index score plus Chula ADL Index score) at the beginning and the end of the study period (SD)*	2.6 (3.0)	3.8 (3.4)

*There are statistically significant between mean scores of the case group and those of the control group; $p < 0.05$

veillance, for the Thai elderly, living in a poor urban area.

The differences between the two groups is probably explained by two factors. Firstly, as the cases and/or their care-givers being asked about abilities in activities of daily living and incidence of falls, they might be concerned with changing ability or falls of the elderly and realised that the cases should seek help. Secondly, the cases had an opportunity to receive community services from the professional team and increase contact with available health and social services.

Despite concern about community care and home visiting for the elderly at present, there has been no study of a practical method in Thailand. Our controlled trial study is the first study in Thailand and demonstrates the benefit of screening using a simple questionnaire. The common key of success of screening in our study and those conducted in western countries is availability of the comprehensive community services. Without the comprehensive services of the CES project, the benefit of surveillance is difficult to demonstrate. Therefore, expanding of the surveillance programme to other areas may be inappropriate unless comprehensive community services have been set up. However, the finding of this study suggests that community care is essential and must be the main direction of health and social care policies for Thai elderly and regular surveillance using a simple questionnaire administered by non-professional personnel may be a key of success.

SUMMARY

The benefit of regular surveillance using a simple questionnaire administered by non-professional personnel of Thai elderly at home is demonstrated. Health and social care policies for the elderly population should be directed toward community care in the future and regular surveillance may be a key to success of community care in Thailand.

ACKNOWLEDGEMENT

We acknowledge the Rachada-Piseksompoj, China medical Board research Funds for a generous grant towards this research. The Care for the Elderly in Klong Toey Slum (CES project) was funded by the HelpAge International and wholeheartedly appreciated by us.

(Received for publication on July 22, 1997)

REFERENCES

1. Jitapunkul S, Bunnag S, Ebrahim S. Health care for elderly people in developing countries: a case study of Thailand. Age Ageing 1993; 22: 377-81.
2. Jitapunkul S, Kamolratanakul P, Ebrahim S. Disability among Thai elderly living in Klong Toey slum. J Med Assoc Thai 1994; 77: 231-8.
3. Jitapunkul S. Disability: a problem of the elderly. Chula Med J 1994; 38: 67-75.
4. Carpenter GI, Demopoulos GR. Screening the elderly in the community: controlled trial of dependency surveillance using a questionnaire administered by volunteers. Br Med J 1990; 300: 1253-6.
5. Hendriksen C, Lund E, Stromgard E. Consequences of assessment and intervention among elderly people: a three year randomised controlled trial. Br Med J 1984; ii: 1522-4.
6. Tulloch AJ, Moore V. A randomised controlled trial of geriatric screening and surveillance in general practice. J Roll Coll Gen Pract 1979; 29: 733-42.
7. Jitapunkul S. Care for the Elderly in Klong Toey Slum (CES project). a final report submitted to the HelpAge International 1995.
8. Marhoney FI, Barthel DW. Functional evaluation: the Barthel Index. Maryland State Med J 1965; 14: 61-5.
9. Jitapunkul S, Kamolratanakul P, Ebrahim S. The meaning of activities of daily living in a Thai elderly population: development of a new index. Age Ageing 1994; 23: 97-101.

การศึกษาชนิดแรนด้อมคอนโทรลของการเฝ้าระวังอย่างสม่ำเสมอในผู้สูงอายุไทยด้วยแบบสอบถามอย่างง่ายโดยบุคคลากรทั่วไป

*สุทธิชัย จิตะพันธ์กุล, พ.บ.**

ผู้สูงอายุไทยอายุ 70 ปีหรือมากกว่าที่อาศัยในชุมชนแออัดคลองเตยจำนวน 142 คนได้เข้าร่วมในการศึกษาเพื่อทดสอบถึงประโยชน์ของการเฝ้าระวังผู้สูงอายุที่บ้านและถูกแบ่งออกเป็นกลุ่มศึกษา (จำนวน 70 คน) และกลุ่มควบคุม (จำนวน 72 คน) เมื่อเริ่มศึกษาผู้สูงอายุทุกคนได้รับการสำรวจและข้อมูลต่างๆรวมทั้งข้อมูลการเจ็บป่วยข้อมูลกิจกรรมในชีวิตประจำวัน (ใช้ดัชนีบาร์เธลเอดีแอลและดัชนีจุฬาเอดีแอล) และการหกล้มที่เกิดขึ้นในระยะสามเดือนก่อนหน้า ตลอดระยะเวลาสามปีผู้สูงอายุในกลุ่มศึกษาจะได้รับการเยี่ยมบ้านโดยบุคคลากรทั่วไป (วุฒิจบชั้นมัธยมศึกษาปีที่ 6) ทุกสามเดือน ผู้สูงอายุและ/หรือผู้ดูแลจะถูกสัมภาษณ์โดยใช้แบบสอบถามอย่างสั้น ผู้สูงอายุที่มีการเปลี่ยนแปลงตามเกณฑ์จะได้รับการเยี่ยมและประเมินโดยพยาบาลหรือแพทย์ทางเวชศาสตร์ผู้สูงอายุและจะได้รับการจัดการที่เหมาะสม ภายหลังจากสามปีผู้สูงอายุทุกคนจะได้รับการสำรวจและข้อมูลต่างๆจะถูกเก็บเพื่อการวิเคราะห์ ผลการศึกษาพบว่าผู้สูงอายุในกลุ่มศึกษาใช้บริการทางสุขภาพและสังคมสูงกว่าผู้สูงอายุในกลุ่มควบคุมแต่ไม่พบว่ามีความแตกต่างอย่างมีนัยสำคัญทางสถิติ ผู้สูงอายุในกลุ่มควบคุมมีคะแนนดัชนีจุฬาเอดีแอลและคะแนนรวมของดัชนีจุฬาเอดีแอลกับดัชนีบาร์เธลเอดีแอลลดลงมากกว่าผู้สูงอายุในกลุ่มศึกษาอย่างมีนัยสำคัญทางสถิติ ($p < 0.05$) ไม่พบความแตกต่างอย่างมีนัยสำคัญทางสถิติของข้อมูลอื่นๆ อย่างไรก็ตาม การเยี่ยมบ้านอย่างสม่ำเสมอโดยบุคคลากรทั่วไปโดยใช้แบบสอบถามอย่างง่ายเป็นวิธีปฏิบัติที่เหมาะสมต่อการให้การบริการชุมชนแก่ผู้สูงอายุที่อาศัยในพื้นที่ยากจน

* ภาควิชาอายุรศาสตร์, คณะแพทยศาสตร์ จุฬาลงกรณ์มหาวิทยาลัย, กรุงเทพ ฯ 10330