Biopsychosocial Impacts on the Elderly from a Tsunami-Affected Community in Southern Thailand

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Objective: *To evaluate the physical illnesses, symptoms of depression, and social status among the elderly in Ban Num Khem Community, Phang Nga Province, Thailand six months after a tsunami, and to evaluate the medical and psychosocial interventions received to identify further needs.*
Material and Method: *The demographic characteristics, tsunami-specific traumatic events, physical examinations, Zung Self-Rating Depression Scale, socio-economic status, and interventions of 87 elderly were conducted on July 23, 2005.*
Results: *Female was 64.4%. Married was 54.0%. Age range was 60-93 years old. There were underweight (11.5%), pre-hypertension (33.3%), hypertension (43.7%), and depression (24.1%). The risks of depression were female, age 65 and over, living alone, loss of income, loss of family members, and hypertension. The majority of them experienced complex physical, psychological, and social problems. Medical and social interventions were still needed. The satisfaction from interventions was found in 79.3%, ranging from the most (11.5%), moderate (48.3%), and mild satisfaction (19.5%).*
Conclusion: *Six months after the tsunami, the elderly still have complex physical, psychological problems, and socio-economic deprivation. To improve their quality of life, these elderly people required appropriate physical and mental health care including social support.*

Keywords: *Tsunami, Physical, Depression, Biopsychosocial, Impact, Intervention*

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Elderly people are more vulnerable to the psychosocial effects of a disaster. They may manifest varying emotional reactions like anger, frustration, and feeling lonely, especially if they are physically disabled, living alone, and lack help from other resources[1]. The recent bereavement is a significant risk factor for depression in the elderly who are also at risk for extended periods of depressive symptoms[2]. On December 26, 2004, an undersea earthquake called a tsunami struck eight countries including the southern part of Thailand, causing severe damage and likely the costliest natural disaster. The resulting death, injury, destruction, and population displacement were unprecedented in Thai history. The Ministry of Public Health, along with other disaster-relief agencies, provided emergency services and dispatched teams to conduct surveillance of illness and injury and rapid assessments of the needs among residents and shelter evacuees[3]. Many physical[4-8] and psychological morbidities[9,10] were reported among children and adults. Surprisingly, there was no article related to the elderly. With the close collaboration with local authorities, the authors were informed that there were approximately 100 vulnerable elderly people in the severely damaged area at Ban Num Khem Community, Phang-Nga Province, who had received limited support. On July 23, 2005, with the support from the Faculty of Medicine, Ramathibodi Hospital, Mahidol University, the authors and the medical mobile team went down south to visit and assess their status and needs.

The aims of the present study were to assess the physical illnesses, symptoms of depression and

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social status among these elderly, and to evaluate the medical and psychosocial interventions received in order to identify further needs.

Material and Method

The physical, symptoms of depression and social health were surveyed on July 23, 2005. Eighty-seven elderly aged 60 years and over who lived in Ban Nam Khem Community were interviewed. The baseline demographic characteristics, tsunami-specific traumatic events, the physical examinations, Zung Self-Rating Depression Scale (SDS)[11], social status and interventions were recorded. For those who were illiterate, the questionnaires were assisted. The raw score from SDS was converted to 100-point scale (SDS Index). SDS Index = (Raw Score/80 total points) x 100. SDS Index less than 50, 50-59, 60-69, and 70 and above is indicative of normal, mild depression, moderate or marked depression, and severe depression, respectively. The report was done by descriptive statistical analysis to describe the subjects' variable characteristics. Factors associated with symptoms of depression were analyzed by odds ratio and 95% confidence interval. A p-value of less than 0.05 was considered significant.

Results

Clinical characteristics of 87 subjects are summarized in Table 1. One hundred family members were dead or missing. Nieces were the largest group (41.0%), followed by daughters or sons (27.0%), brothers or sisters (12.0%), daughters or sons in law (10.0%), wives or husbands (7.0%), and others (3.0%). The properties lost or destroyed such as houses, houses and others lost rather than homes were found in 35 subjects (40.2%), 38 subjects (43.7%) and 13 subjects (14.9%), respectively.

Table 2 shows that unemployment was increased remarkably. Various occupations were decreased except housework. None worked in fisheries. Income was decreased to zero. Some support was received, as shown in Table 3. Further medical and social interventions were needed. About 43 subjects (49.5%) needed cash for investment ranging from 5,000 to 200,000 Baht. Twenty-two subjects (24.9%) expected more cash ranging from 300 to 40,000 Baht per month for living expense. Most of them lived alone because of reduced numbers and missing family members. Some had to raise the remaining children. Some had no identification cards to qualify for official support such as from the government elderly scheme.

Table 1. Elderly subjects' characteristics (n = 87)

Characteristics	Number	%
Mean age 67.6 ± 6.5 years		
Min 60, Max 93 years		
Age (years)		
60-64	33	37.9
65-69	29	33.3
70-74	12	13.8
75-79	9	10.3
≥ 80	4	4.6
Sex		
Male	31	35.6
Female	56	64.4
Marital Status		
Single	4	4.6
Married	47	54.0
Separate/Divorce	2	2.3
Widow/Widower	34	39.1
Education		
Uneducated	20	23.0
Primary School	60	69.0
Secondary & high School	4	4.5
Non responder	3	3.4

Table 2. The social status of the elderly before and after tsunami (n = 87)

Variable	Before		After	
	N	%	N	%
Occupation				
Unemployed	10	11.5	61	70.1
Merchant	40	46.0	8	9.2
Fishery	10	11.5	-	-
Labor	10	11.5	7	8.0
Agriculture	6	6.9	2	2.3
Housework	6	6.9	7	8.0
Business	4	4.6	1	1.1
Non responder	1	1.1	1	1.1
Income (Baht)				
No income	9	10.3	57	65.6
Uncertainty	3	3.4	5	5.7
< 5,000	34	39.1	19	21.8
5,000-9,999	25	28.7	5	5.7
10,000-14,999	10	11.5	-	-
≥ 15 000	5	5.7	-	-
Non responder	1	1.1	1	1.1
Living				
Own house	75	86.2	22	25.3
Hire	5	5.7	3	3.4
Live with other	4	4.6	11	12.6
Temporary shelter	-	-	40	46.0
Others	1	1.1	5	5.7
Non responder	2	2.3	6	6.9

Only 38 subjects (43.7%) had completed the Zung SDS questionnaires. Seventeen subjects (19.5%) were normal. Depression was found in 21 subjects (24.1%) as shown in Table 4. Incomplete responses (56.3%) were found in every item of the questionnaires except the one "I feel down- hearted and blue". The remarkable item omitted "I still enjoy sex" was found in 36 subjects (41.4%). One to eight subjects per item omitted the others. They admitted that they had psychological problems but they did not want to see psychiatrists. They said, "I am not insane". Factors associated with increased symptoms of depression were female (odd ratio [OR] 2.81; 95% confidence interval [CI] 0.73-10.77, p = 0.12), aged of 65 years old and over (OR 2.0; 95% CI 0.52-7.7, p = 0.25), living alone such as single, divorce, or separation (OR 1.47; 95% CI 0.35-6.13, p = 0.44), no income was generated after the tsunami (OR 1.26; 95% CI 0.34-4.75, p = 0.5), hypertension (OR 1.25; 95% CI 0.34-4.59, p = 0.5) and loss of family members (OR 1.14; 95% CI 0.31-4.20, p = 0.56).

By using the Thailand Body Mass Index (BMI kg/m^2)[12], 10 (11.5%), 49 (56.3%), 19 (21.8%) and 4 subjects (4.6%) were underweight (BMI less than 18.5), at risk of obesity (BMI 23.0-24.9), grade I obesity (BMI 25.0-29.9) and grade II obesity (BMI equal to and more than 30), respectively. Only 20 subjects (23.0%) had their blood pressure normal. Pre-hypertension and hypertension were found in 29 (33.3%) and 38 subjects (43.7%), respectively. Diseases of all systems including cataract, sinusitis and allergic rhinitis, thyroid nodule, chest pain, asthma, peptic like ulcer, dermatitis, kyphoscoliosis and low back pain, osteoarthritis of the knees, and diabetes mellitus were found in 34 subjects (39.1%).

The satisfaction from various kinds of interventions was found in 69 subjects (79.3%), ranging from the most (10 subjects, 11.5%), moderate (42 subjects, 48.3%) and mild satisfaction (17 subjects, 19.5%). Dissatisfaction was found in 12 subjects (13.8%).

Table 3. Medical and social interventions received and needed (n = 87)

Interventions	Received		Need	
	N	%	N	%
Shelter	61	70.0	25	28.7
Space for investment	3	3.4	14	16.1
Cash for investment	19	21.8	43	49.5
Cash for living	42	48.3	22	24.9
Psychological support	21	24.1	11	12.6
Physical treatment	28	31.9	10	11.5

Table 4. Severity of depression by Zung self-rating depression scale

Severity of depression	N	%
Normal	17	19.5
Mild	10	11.5
Moderate	9	10.3
Severe	2	2.3
Incomplete response	49	56.3
Total	87	100.0

Discussion

The assessment of elderly people in this community revealed high prevalence of physical, psychological, and social problems. The prevalence rate of hypertension was very high. About half of them had co-morbidity for which continuous care was needed.

The prevalence rate of depressive symptoms in this group was relatively higher than that found in the general adult population affected by the tsunami in southern Thailand[10]. All reported factors are not clearly (statistically significant) associated with depression (p > 0.05). The high prevalence of depressive symptoms have been previously found in female elderly[2], having physical co-morbidity such as hypertension and socio-economic disruption. Beside the small sample size, there were other limitations. There was a relatively low complete response rate of Zung SDS (43.7%). The instrument has been successfully translated into Thai but there was no pre-tested and retested among target population. More than half of the samples were illiterate and graduated at primary school level. The test might have been interfered with through assistance in answering the questionnaires.

The misunderstanding between insanity and mental health conditions such as symptoms of depression might have prevented elderly subjects from seeking help from mental health authorities or relief groups. Due to this belief, half of the subjects refused to seek psychiatric supports. Thus, the metal health relief group should be integrated into other relief agencies in short and long term interventions. Education about mental health problems associated with disaster, such as grief, depression, and other related symptoms is needed as well as continuous surveillance.

The socio-economy was also greatly impacted by the tsunami. Many elderly subjects were either homeless, or had their livelihoods disrupted. Besides

properties being destroyed, elderly subjects have also lost or did not have important identity cards, as well as land and boat registration documents. Without identity cards and documents, various types of government assistance cannot be accessed. These problems were seen in many tsunami affected countries as well[13,14].

Conclusion

This is the first report on elderly victims at six months after the tsunami in southern Thailand. A considerable proportion of elderly people had had physical illness, symptoms of depression, and socioeconomic deprivation. Primary care physicians, psychiatrists, surgeons, nurses, and social workers could be the multidisciplinary team to improve quality of care. Nevertheless, the report provides an essential figure of biopsychosocial information that is helping healthcare providers identify elderly survivors' needs and outcomes.

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กาย จิต สังคม ของผู้สูงอายุที่ได้รับผลกระทบจากสึนามิ ในหนึ่งชุมชนทางภาคใต้ของประเทศไทย

สมจิต พฤกษะริตานนท์, รณชัย คงสกนธ์

วัตถุประสงค์: *เพื่อประเมินความเจ็บป่วยทางกาย อาการซึมเศร้า และสถานะเชิงสังคมของผู้สูงอายุที่บ้านน้ำเค็ม จังหวัดพังงา 6 เดือนหลังจากเหตุการณ์สึนามิ และประเมินความช่วยเหลือที่ผู้สูงอายุได้รับและความจำเป็นที่ควรได้รับ ทั้งด้านการแพทย์และสังคม*

วัสดุและวิธีการ: *เมื่อวันที่ 23 มิถุนายน พ.ศ. 2548 ผู้รายงานได้รวบรวมข้อมูลผู้ป่วยสูงอายุ 87 ราย รวมทั้งการตรวจร่างกาย การตอบแบบสอบถาม อาการซึมเศร้า โดยใช้ Zung self-rating depression scale เหตุการณ์ที่เกี่ยวข้องกับสึนามิ สถานะทางสังคม และการช่วยเหลือ*

ผลการศึกษา: *ผู้สูงอายุ 87 ราย อายุ 60-93 ปี เพศหญิง 64.4% สมรส 54.0% มี pre-hypertension 33.3% ความดันโลหิตสูง 43.7% และอาการซึมเศร้า 24.1% โดยพบว่าเพศหญิงที่อายุตั้งแต่ 65 ปีขึ้นไป กลุ่มที่โสด หย่าร้าง และเป็นหม้าย ไม่มีรายได้ สูญเสียบุคคลในครอบครัว และมีความดันโลหิตสูง เป็นผู้ที่มีความเสี่ยงต่อภาวะซึมเศร้า ผู้สูงอายุส่วนใหญ่ประสบปัญหาเชิงซ้อน ได้แก่ การสูญเสียบุคคลอันเป็นที่รัก บ้านและทรัพย์สิน หน้าที่การงานและรายได้ ไม่มีบัตรประจำตัวประชาชนและเอกสารสิทธิ ตลอดจนการช่วยเหลือ ผู้สูงอายุกลุ่มนี้ยังมีความจำเป็นที่ต้องได้รับความสนับสนุนเพิ่มเติม ทั้งด้านที่อยู่อาศัย การเงินเพื่อลงทุนเลี้ยงชีพ และการดำรงชีพ การรักษาทั้งทางร่างกายและจิตใจ การประเมินความช่วยเหลือที่ได้รับอยู่ในเกณฑ์พึงพอใจ 79.3% แบ่งเป็นมากที่สุด 11.5% ปานกลาง 48.3% และน้อย 19.5%*

สรุป: *6 เดือนหลังจากเหตุการณ์สึนามิ ผู้สูงอายุยังมีปัญหาเชิงซ้อนทางกาย จิตใจ และสังคม การทำให้คุณภาพชีวิตดีขึ้นจึงต้องได้รับการสนับสนุนทุกมิติอย่างเหมาะสม*