

Quality of Life among the Navies and Their Spouses Survivors, Six Months after the Tsunami Disaster in Phang-Nga Naval Base, Thailand

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Objective: Identify the consequences for the survivors of the Tsunami disaster on health related quality of life among members of the Navy and their spouses, six months after the disaster.

Material and Method: Using a structured questionnaire modified from the MOS SF-36. Four hundred thirty four subjects participated in the present study. The sample was male (77%), married (67%) and mean age was 34 years old.

Results: The quality of life scores among member of the Navy or their spouses were lower than the 2006 Thailand normative data in almost all subscales except physical functioning, bodily pain, and social functioning subscales. The major consequence of the Tsunami was mental health problems. A majority of the survivors who seriously experienced mental problems were female, low education, decreased income, loss of one's family members/loved ones, or property.

Conclusion: To improve their quality of life, these people required appropriate social support and physical and mental health care. Bodily pain was the only an indicator subscale of QOL that was statistically significantly associated with Tsunami exposure. The QOL measures provided essential data and information that helped healthcare providers identify survivors' needs and outcomes and therefore, knowledge of the changes in QOL over the time after Tsunami might help guide health programs to efficiently allocate resources at different times.

Keywords: Quality of life, Tsunami disaster, Phang-Nga Naval Base, MOS SF-36

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The 2004 Indian Ocean earthquake, known by the scientific community as the Sumatra Andaman Earthquake, was an undersea earthquake that occurred at 00:58:53 Coordinated Universal Time (UTC) (07:58:53 local time)⁽¹⁾ on December 26, 2004. The Tsunami generated by the earthquake killed approximately 275,000 people, making it one of the deadliest disasters in modern history. The impact of the Tsunami affected many aspects, including humanitarian, economic, and environmental. It affected the quality of life. Phang-Nga was the province hardest hit by the Tsunami in southern Thailand. Most of the deaths occurred in this province. The Tsunami killed approximately 5,395 people (at least 2,213 foreigners),

2,845 went missing, and 5,597 were injured (including 1,253 foreigners)⁽²⁾. In Phang-Nga Naval Base, almost all of the area, over 2,000 Rai, had been destroyed by the killer wave, including the General Headquarter, an arsenal, a warship, the Naval Base's hospital, the Children day care center, a golf course, and Naval houses. Property loss was assessed at over 670 million baht. The Phang-Nga Naval Base reported Tsunami killed four civil servants, one Navy officer, one employee, 24 family's members, and two Navy officers went missing⁽³⁾. Navies were on the front line from the moment when the Tsunami struck. In this situation, they were rescue workers. They were expected to help the victims and to manage a very large number of dead bodies in the sea, far more than they had ever seen in their entire careers. They had to provide help to the thousands of survivors who had lost family members, houses, including children orphaned by the Tsunami. They did all this while coping with their own personal losses and bereavement. Almost all of the

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472 households were exposed to the Tsunami. Properties loss was assessed at over 100,000 baht per family. Most people that were affected by the Tsunami had yet to re-establish secure livelihoods six months after the tsunami. They continued to need relief assistance, particularly financial assistance. Many families still did not have enough money to resume their lives and repay their debts. The women had not been able to restart any income earning activities due to the loss of equipment. People required help from organization to identify needs and gaps. They listed items that needed to be done to speed the recovery so that more people could rebuild their livelihoods, maintain good health, and have a better quality of life. Quality of life is a study area that attracted a great deal of interest over the past ten years, particularly in the areas of health and social services. Furthermore, the areas of medicine and education are increasingly being studied. The concept of quality of life includes physical, psychological, and social functioning as well as perception of health status, pain, and overall satisfaction with support with life.

The present study aimed to estimate the consequences of the Tsunami disaster on health related quality of life after six months, on the navies or their surviving spouse in Phang-Nga Naval Base, Phang-Nga Province by using SF-36.

Material and Method

A descriptive cross sectional survey was conducted to find out the health related quality of life of the navies or their spouses who survived the Indian Ocean Tsunami and lived in the Phang-Nga Naval Base. General characteristics, characteristics and amount of losses, characteristics of social support, history of illness, and Tsunami exposure were also explored. The population studied included 614 people in 472 households who lived in the houses of Phang-Nga Naval Base. The present study used the same cutoff point used in the previous study⁽⁴⁾. An overall quality of life score of equal or greater than 75% of total scores was considered as “good quality of life”, the remaining was considered as “need for improvement”. Collecting data took place over 15 days between July 24 and August 7, 2005 by self-reported questionnaire or personal interview. Data processing and analysis was done according to the standard protocol of the “SF-36 Health Survey: manual and interpretation guide”. Data analysis was reported in term of frequency, percent, mean, standard deviation, and range. Chi square test or Fishers’ exact test was

used to find the association between variables and quality of life. P-value < 0.05 was considered significant.

The present study was approved by the Ethical Clearance Committee on Human Rights of Faculty of Medicine, Ramathibodi Hospital with Number 0722/2005.

Results

Four hundred thirty four subjects participated in the present study. A majority of the samples were male (77%), married (67%) and mean age was 34 years old. The overall mean scores and standard deviation of SF-36 summary scales were 67.98 ± 18.85 . The mean scores ranged from 13.19 to 98.88. The lowest mean scores were in vitality (58.98 ± 17.48) and the highest mean scores were in physical functioning (78.62 ± 21.502). SF-36 mean scores of PCS were higher than MCS (70.56 ± 20.44 vs. 65.41 ± 19.50).

The mean scores of SF-36 for Thailand normative data (Bangkok) (5) were compared with the mean scores of SF-36 for the navies or their spouses. The results revealed that the mean scores of the navies or their spouses were lower than Thailand normative data (Bangkok) in almost all subscales except physical functioning, bodily pain, and social functioning. In addition, when comparing with Thailand normative data (Bangkok) by gender, the male results of the present study population were higher than Thailand normative data (Bangkok) in physical functioning, bodily pain, general health, and social functioning. However, for female, the mean scores of the study population were lower than Thailand normative data (Bangkok) in almost all subscales except social functioning (Table 1).

The association between independent variables and quality of life were presented in Table 2.

Discussion

The navies or their spouses reported that they needed improvement in their quality of life. The result showed lower mean scores of quality of life in almost all subscales. This result was similar to many previous studies⁽⁶⁻¹⁶⁾. However, they tended to have good quality of life in physical functioning and bodily pain subscale. This could be explained because the majority of the population surveyed was male, in the navy, thus they always trained their physical health. In comparing with the Thailand normative data (Bangkok), their mean scores were lower than Thailand normative data (Bangkok) in almost all subscales except physical function, bodily pain, and social function subscales.

When comparing by gender, the mean scores of both male and female were lower than Thailand normative data (Bangkok) in almost all subscales of MCS except social function. An explanation of this could be that the consequences of Tsunami seriously affected their mental health, even a long time after the event. This is in accordance with Toukmanian et al⁽¹⁷⁾. That study stated that disasters involving death, extensive casualties, and massive destruction were related to more severe and chronic psychological problems in victims. Furthermore, disaster experience was related to increasing psychological impairment in the individual.

In the present study, female, married or widowed/divorced, 45 years and more, and lower levels of education respondents were a vulnerable group that tended to need improving their QOL. Another important finding in this study was the significant association between changes in income and overall subscales quality of life ($p = 0.001$). The decrease of family income produced the most significant effect except on mental health subscale. Decreased income was based on the difference between incomes before and after the Tsunami. A possible explanation was that there was less opportunity to work for women thus, most family incomes decreased. This is in accordance with the results from some studies that stated the financial

loss affects physical and psychological health⁽¹⁸⁾. A study by Chou et al⁽⁷⁾ indicated that one of the risk factors that affected quality of life in survivors were financial loss. Study by Woerschling et al⁽¹⁹⁾ reported that loss of income is a factor affecting the mental health markers. The results showed that the impact of the loss of one's family members, relatives, friends/loved one, loss of one's house, the loss of one's own business or shop affected overall quality of life. Similarly, a study by Tsai et al⁽¹³⁾ indicated that loss of family member would induce a significant negative influence on quality of life, especially on the MCS score. Wu et al⁽¹⁶⁾ also reported that the persistence of long-term economic problems was one of many important factors affecting quality of life. Regarding for social support, the result showed that the persons who needed social support and were unsatisfied with the social support tended to report lower quality of life except on role-physical limitations, general health, vitality, and role-emotional limitations subscales. The explanation that could account for the relationship between the needs for social support and quality of life, is that subjects may need a lot of help because they experienced many losses. Thus, they may have a number of psychological symptoms and may be more likely to seek social support than others. The availability of social support was important in helping people overcome difficult situations and control stress⁽²⁰⁾.

Table 1. Comparison between the mean scores of Thailand normative data for SF-36 (Bangkok) and the mean scores of SF-36 for the study population (n = 434 subjects)

Subscales	Mean scores					
	Overall		Male		Female	
	2006 Thailand normative data (Bangkok)	Scores of the study population	2006 Thailand normative data (Bangkok)	Scores of the study population	2006 Thailand normative data (Bangkok)	Scores of the study population
PCS	72.25	70.56	70.99	74.81	73.03	56.33
Physical functioning	72.52	78.62	72.98	81.61	72.24	68.65
Role-physical	82.16	66.47	79.58	73.42	83.74	43.25
Bodily pain	70.84	76.52	68.29	79.75	72.41	65.75
General health	63.48	60.61	63.10	64.47	63.72	47.70
MCS	69.58	65.41	69.63	69.06	69.55	53.21
Mental health	70.83	62.78	70.46	65.50	71.05	53.68
Vitality	63.51	58.98	64.05	61.60	63.17	50.25
Social functioning	67.51	74.28	70.52	76.08	65.67	68.25
Role-emotional	76.48	65.59	73.47	73.05	78.32	40.66

PCS = physical component summary; MCS = mental component summary

Table 2. Association between variables and quality of life (n = 434 subjects)

Subscales	Overall	PCS	PF	RP	BP	GH	MCS	MH	VT	SF	RE
Gender											
Male (n = 334)	71.94	74.81	81.61	73.42	79.75	64.47	69.06	65.50	61.60	76.08	73.05
Female (n = 100)	54.77*	56.33*	68.65*	43.25*	65.75*	47.70*	53.21*	53.68*	50.25*	68.25*	40.66*
Age											
< 24 (n = 116)	71.53	74.42	80.81	71.12	80.81	64.95	68.64	66.55	62.54	75.64	69.82
25-34 (n = 120)	70.31	73.75	83.00	68.95	80.00	63.04	66.88	63.53	59.62	76.04	68.33
35-44 (n = 135)	65.28	67.53	76.88	63.33	73.24	56.66	63.04	60.56	56.66	72.22	62.71
≥ 45 (n = 63)	62.78	63.84*	70.00	59.92	69.04*	56.42	61.72	59.17*	56.19	72.81	58.73
Marital status											
Single (n = 126)	73.14*	76.08*	81.62	75.99	81.05*	65.67	70.19*	66.34*	63.21*	76.88	74.33*
Married (n = 291)	65.09	68.43	78.16	62.02	74.87	58.69	63.36	61.38	57.28	73.28	61.51
Widowed (n = 17)	65.41	65.91	64.41	72.05	71.32	55.88	64.91	60.23	56.76	72.05	70.58
Education											
Primary (n = 57)	57.24*	57.79*	63.85*	47.80*	69.07*	50.43	56.69*	56.63	55.00	69.51	45.61
Secondary (n = 241)	67.89	70.96	79.64	66.70	76.65	60.85	64.83	63.00	58.42	72.61	65.28
Higher-secondary (n = 73)	71.98	74.17	84.52	71.57	78.76	61.84	69.78	63.34	60.82	80.99	73.97
University (n = 30)	73.31	75.43	83.83	70.83	80.41	66.66	69.76	65.09	61.81	78.40	73.73
Occupation											
Government (n = 306)	71.81	74.77	82.33	72.54	79.90	64.31	68.85	65.13	61.47	76.38	72.44
Employees (n = 43)	70.61	72.55	73.60	75.00	77.90	63.72	68.67	67.44	59.30	75.87	72.09
Housewives (n = 85)	52.85*	54.37*	67.82*	40.29*	63.67*	45.70*	51.34*	51.95*	49.88*	65.88*	37.64*
Changes in income											
Decreased income (n = 92)	59.84*	62.12*	72.33*	51.90*	70.51*	53.75*	57.55*	57.34	54.07*	69.15*	49.63*
Constant & increased income (n = 342)	70.17	72.82	80.32	70.39	78.14	62.45	67.52	64.24	60.30	75.65	69.88
Loss of family members											
No (n = 400)	69.03	71.70	79.76	68.50	77.46	61.08	66.36	63.65	59.68	75.18	66.91
Yes (n = 34)	55.66*	57.09*	65.29*	42.64*	65.44*	55.00*	54.23*	52.58*	50.73*	63.60*	50.00*
Loss of houses											
No (n = 136)	72.91	76.11	83.63	72.24	82.99	65.58	69.71	65.91	62.13	78.76	72.05
Yes (n = 298)	65.73*	68.02*	76.34*	63.84*	73.57*	58.33*	63.44	61.35	57.55*	72.23*	62.63
Loss of own business & shops											
No (n = 318)	70.45	73.23	80.45	70.91	78.61	62.97	67.66	64.27	60.25	76.02	70.12
Yes (n = 116)	61.21*	63.21*	73.62*	54.31*	70.79*	54.13*	59.21*	58.68*	55.51*	69.50*	53.16

* Significant at $p \leq 0.05$

PCS = physical component summary; PF = physical functioning; RP = role-physical; BP = bodily pain; GH = general health; MCS = mental component summary; MH = mental health; VT = vitality; SF = social functioning; RE = role-emotional

Table 2. (cont.)

Subscales	Overall	PCS	PF	RP	BP	GH	MCS	MH	VT	SF	RE
Estimated properties loss											
≤ 10,000 (n = 105)	73.28	75.65	82.00	72.38	82.38	65.85	70.91	68.45	64.19	79.28	71.74
10,000-50,000 (n = 108)	68.84	71.82	78.88	69.90	77.77	60.74	65.85	63.85	59.21	72.45	67.90
50,001-100,000 (n = 95)	67.24	69.52	76.15	66.84	74.21	60.89	64.97	60.04	57.00	76.18	66.66
> 100,000 (n = 126)	63.38*	66.00*	77.46	58.33	72.32*	55.91	60.76	59.20*	55.95	70.23*	57.67*
Need for social support											
No (n = 49)	76.31	79.46	86.53	80.61	83.16	67.55	73.16	70.20	63.77	83.16	75.51
Yes (n = 385)	66.92*	69.42*	77.62*	64.67	75.68*	59.72	64.42*	61.83*	58.37	73.14*	64.32
Need for money support											
No (n = 101)	74.18	75.85	83.66	73.01	80.69	66.03	72.51	69.06	64.60	79.82	75.56
Yes (n = 333)	66.10*	68.95*	77.10*	64.48	75.26*	58.96*	63.25*	60.87*	57.28*	72.59*	62.26*
Need for emotional support											
No (n = 322)	69.89	72.52	80.34	69.87	78.22	61.63	67.27	63.95	59.54	76.12	69.46
Yes (n = 112)	62.49*	64.93*	73.70*	56.69*	71.65*	57.67	60.05*	59.42	57.36	68.97*	54.46*
Received social support											
No (n = 46)	68.33	71.50	79.23	67.39	79.07	60.32	65.15	57.73	55.43	75.00	72.46
Yes (n = 388)	67.94	70.44	78.55	66.36	76.22	60.64	65.44	63.38	59.40	74.19	64.77
Levels of satisfaction with support											
Very satisfied (n = 39)	83.94	83.79	86.15	85.89	90.70	72.43	84.08	80.30	78.58	89.42	88.03
Moderate (n = 193)	68.22	70.61	77.17	65.93	76.23	63.10	65.84	64.55	60.00	74.22	64.59
Mild (n = 122)	64.61	68.09	78.97	61.68	74.59	57.13	61.41	58.26	54.75	70.90	60.65
Unsatisfied (n = 71)	63.84*	66.44*	76.90	64.78	72.18*	51.90*	61.23*	55.88*	52.32*	71.47*	65.25*
Physical illness											
No (n = 388)	69.32	72.10	79.85	67.84	77.93	62.78	66.54	62.88	60.05	75.12	67.09
Yes (n = 46)	56.70*	57.52*	68.26*	54.89	64.67*	42.28*	55.87*	53.47*	50.00*	67.11*	52.89
Tsunami exposure											
No (n = 83)	71.28	73.73	80.48	69.58	81.02	63.85	68.82	66.60	60.96	79.06	68.67
Yes (n = 351)	67.02	69.80	78.19	65.74	75.46*	59.84	64.60	61.88	58.51	73.14	64.86

* Significant at $p \leq 0.05$

PCS = physical component summary; PF = physical functioning; RP = role-physical; BP = bodily pain; GH = general health; MCS = mental component summary; MH = mental health; VT = vitality; SF = social functioning; RE = role-emotional

Kato et al⁽²¹⁾ noted that if people did not get some kind of support immediately, it was possible that the prevalence of various psychiatric problems, such as depression, adjustment disorders, alcoholism, or chronic PTSD would increase. Regarding the association between illness and quality of life, physical history illness was significantly associated with almost all subscales of quality of life except on role-physical and role-emotional limitations. This finding was in line with Wu et al⁽¹⁶⁾ who found that the predictors for poor quality of life were physical illness. Some studies^(12, 22) have shown that when subjects with physical illness experience disaster, their prognosis and quality of life become worse. The present study also revealed the Tsunami exposure was significantly associated with quality of life only on bodily pain subscale, which reflected the subjective feeling of body function. One reason given to explain this finding could be that the participants were traumatized by the Tsunami when it occurred. They also suffered major physical injury or disability.

Conclusion

The QOL measures provided essential data and information that helped healthcare providers identify survivors' needs and outcomes. Therefore, knowledge of the changes in QOL over the time after the Tsunami might help guide health programs to efficiently allocate resources at different times.

Potential conflicts of interest

None.

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คุณภาพชีวิตของทหารเรือประจำการ คู่สมรสที่รอดชีวิตภายหลังประสบภัยธรณีพิบัติคลื่นยักษ์สึนามิ 6 เดือน ณ สถานทัพบเรือพังงา ประเทศไทย

รณชัย คงสกนธ์, ธนุช พุทธาวรางค์, ปราการ ถมยากร

วัตถุประสงค์: เพื่อศึกษาถึงผลกระทบของภัยพิบัติคลื่นยักษ์สึนามิต่อคุณภาพชีวิตของทหารเรือประจำการ หรือ คู่สมรสที่รอดชีวิตภายหลังประสบภัยคลื่นยักษ์สึนามิ 6 เดือน

วัสดุและวิธีการ: เก็บรวบรวมข้อมูลต่าง ๆ ในช่วงวันที่ 24 กรกฎาคม ถึง 5 สิงหาคม พ.ศ. 2549 โดยใช้แบบประเมินคุณภาพชีวิต (SF-36) ฉบับภาษาไทยซึ่งรวมทั้งแบบสัมภาษณ์ข้อมูลทั่วไป และปัจจัยที่เกี่ยวข้อง มีผู้เข้าร่วมในการศึกษา 434 คน กลุ่มตัวอย่างส่วนใหญ่เป็นชาย (ร้อยละ 77) มีสถานภาพสมรส (ร้อยละ 67) อายุเฉลี่ยประมาณ 34 ปี

ผลการศึกษา: พบว่าทหารเรือประจำการหรือคู่สมรสมีคุณภาพชีวิตที่ต่ำกว่าข้อมูลคุณภาพชีวิตที่มาตรฐานของประชากรไทย (กรุงเทพมหานคร) ในเกือบทุกด้านยกเว้นด้านสมรรถนะทางร่างกาย, ความเจ็บปวดของร่างกาย, และบทบาททางสังคม และยังพบว่าคลื่นยักษ์สึนามิมีผลกระทบต่อทหารเรือ หรือ คู่สมรส อย่างมากที่สุดคือ ปัญหาทางด้านจิตใจ ส่วนใหญ่ของผู้รอดชีวิตที่ประสบกับปัญหาสุขภาพจิตใจอย่างรุนแรงเป็นเพศหญิง มีการศึกษาต่ำ มีรายได้ลดลง มีการสูญเสียของสมาชิกในครอบครัว/คนที่รักหรือทรัพย์สิน เพื่อที่จะพัฒนาคุณภาพชีวิต บุคคลเหล่านี้ต้องการการช่วยเหลือทางสังคม และการดูแลสุขภาพร่างกายและจิตใจที่เพียงพอและเหมาะสม อย่างไรก็ตามจากการศึกษาครั้งนี้พบว่าการเผชิญหน้ากับคลื่นยักษ์สึนามิมีความสัมพันธ์อย่างมีนัยสำคัญทางสถิติกับคุณภาพชีวิตทางด้านความเจ็บปวดทางร่างกายเท่านั้น

สรุป: การศึกษาครั้งนี้จะเป็นประโยชน์ต่อบุคลากรทางการแพทย์ในการที่จะจำแนกและเข้าถึงความต้องการของผู้รอดชีวิตจากภัยพิบัติคลื่นยักษ์สึนามิ การให้ความช่วยเหลือทั้งภายในและนอกประเทศ สามารถนำความรู้เกี่ยวกับการเปลี่ยนแปลงคุณภาพชีวิตภายหลังประสบภัย ช่วยเป็นแนวทางในการจัดสรรความช่วยเหลือและส่งเสริมคุณภาพชีวิต ให้เป็นไปอย่างมีประสิทธิภาพและเหมาะสมต่อไป