Factors Predicting Quality of Life of Trauma Survivors in the Unrest Areas of the Southernmost Provinces of Thailand

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Living in the midst of terrorist attack areas has a potential impact on the Quality of Life (QoL) particularly in those who experience a traumatic injury. This study aimed to identify factors influencing QoL of trauma survivors in the unrest area of the southernmost provinces of Thailand. 132 trauma survivors from the four southern Thai provinces were purposively selected. The instruments used were questionnaires including that for:- (1) demographic and health record, (2) social support, (3) perceived security of life, and (4) the Short Form Health Survey-36 Questionnaire. The descriptive statistics and hierarchical multiple regression were used in the data analysis. The findings showed that some personal and environmental factors, namely disability, employment, social support, and feeling secure from the unrest, had significant direct effects on QoL of trauma survivors and could explain 47% of the variance of QoL. This study could suggest the development of appropriate intervention to enhance QoL of trauma survivors in the unrest area of the southernmost provinces in Thailand.

Keywords: quality of life, trauma, predictive factors

Human violence is nowadays a part of the complex organizing dynamics. The violence caused by multidimensional conflict in southern Thailand in particular has been reported for over a decade. The scale of conflict has left thousands of mentally traumatized and physically disabled people (Chongsuvivatwong, Boegli, & Hasuwannakit, 2014). A report from the database of Deep South Watch (Kaewnui & Panatnashi, 2014) showed that there were 14,701 unrest events with 11,375 injured in the southernmost provinces of Thailand. The events have extreme effects on survivors and their families, especially those events causing survivors to lose vital parts of their body and become disabled (Jitpiromsri, 2010; Songwathana, Watanasiriwanich, & Kitrungrote, 2013). Their living is more dependent on others and they feel stressed, nervous, suspicious, annoyed, and unsafe in life and property (Yodchai, Nakdum, & Thaniwattananon, 2007). These problems could cause trauma survivors to have a poorer QoL compared to that of other people (Aitken, Davey, Ambrosed, Connelly, Swanson, & Bellamy, 2007; Schnurr, Lunney, Bovin, & Marx, 2009).

World Health Organization (WHO) defines quality of life (QoL) as an individual's perception of their position in life in the context of the cultural and value systems in which he or she lives and in the relation to his or her goals, expectations, standards and concerns (The WHOQOL Group, 1998). This reflects the QoL as a subjective evaluation which is embedded in the cultural, social and environment context. However, individual outcome measures in patient population should be specific to health. It is suggested that health-related quality of life developed by Wilson and Cleary (1995) is more appropriate to use when assessing perception of one's own health status (Ferrans, Zerwic, Wilbur, & Larson, 2005).

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Regarding the previous literature on QoL in trauma, there are two main factors related to QoL, namely personal and environmental factors. The personal factors include age, gender, employment, etc., while the environmental factors include social support, freedom, physical safety and security. A number of studies have examined some personal background with QoL. For example, QoL was associated with age, gender (Alves et al., 2009), employment and income (Sluys, Häggmark, & Iselius, 2005), the severity of injury and disability (Dimopoulou et al., 2004; Thongsook, Wachirawat, Pookboonmee, & Masingboon, 2006), the time after being injured (Chaichana, Sindhu, Chayaput, & Songcharoen, 2008), and having experience of unexpectedly losing one's family members (Boontakool, Lertpaiboon, & Intanon, 2008). In addition, some environmental factors such as receiving social support may allow those with physical disability to have a higher QoL (Xiong, Chaojie, & Ningxiu, 2010). However, perceived security of life in the unrest area could affect people's daily life and this has not been examined except for healthcare professionals (Buddhachart, 2007). Although several impacts of injuries have been reported, QoL of trauma survivors living in the midst of an unrest area remains unexplored.

Research Objective

The main objective of this study was to examine the predictive factors (namely selected personal factors (employment, income, experience of losing family members, time after injury, disability) and environment-related factors (social support, perceived security of life) which may affect the QoL of trauma survivors living in the midst of an unrest area.

Conceptual Framework

Health-related quality of life developed by Wilson and Cleary (1995) was used as the conceptual framework of this study because it offered the most comprehensive view of pathways linking traditional clinical variables and concepts which was most relevant to the health-related quality of life construct (Ferrans, Zerwic, Wilbur, & Larson, 2005). Five core domains were categorized into two main parts, namely physical health part (biological and physiological factors, symptom status, functional status) and mental health part (general health perceptions and perceived QoL). In addition, the explanatory variables were personal and environment-related factors.

Hypotheses

The study variables (5 personal or background factors and 2 environmental factors) have a direct effect on QoL.

Methodology

Research Design

The A descriptive cross-sectional design was used to conduct this study. One hundred and thirty two individuals were recruited from four southern provinces in Thailand using the 2012 Deep South Watch database (Kaewnui & Panatnashi, 2014). Inclusion criteria were trauma survivors who were:- (1) aged over 18 years, (2) discharged from hospital for more

than one month, (3) able to communicate, and (4) living in areas where the researchers could access and follow them after hospital discharge. Due to safety issues and inability to gain access to the all, the sample size was calculated using Thorndike's formula (Thorndike, 1987).

This study was approved by the Research Ethics Committee of Faculty of Nursing, Prince of Songkla University, Thailand, (NUR540544b) and the ethics committee of regional and general hospitals in southernmost provinces, as well as the Academic Coordination Center which is a non-government organization (NGO) that supports the affected trauma survivors from the unrest in the southern region. All potential subjects who met the criteria were approached and informed about the nature and objectives of the study, and the rights protection of subjects. After each subject was willing to participate in this study and provided informed consent, they were given an appointment for interview. In the study, the researchers and trained local research assistants collected data at each subject's home.

The instruments used to gather data were a set of questionnaires, which comprised the following:

Demographic and Health Record consisting of gender, age, marital status, educational level, job before and after injury, individual and family income, causes of injury, injury severity, injured organs, the time after injury, disability, current symptoms and complications, disability, previous history of losing a family member, and the frequency of the unrest events in the village of residence.

Social Support Questionnaire was developed based on House's social support concept (House, 1981). There were four parts to this questionnaire including 23 items: five items each of emotional support and appraisal support, seven items of informational support, and six items of tangible support. The responses were rated on a five-point scale where 0 = 'never being helped' to 4 = 'often being helped'.

Perceived Security of Life in the Unrest Areas Questionnaire was developed based on literature review. There were nine questions: seven items were related to travelling, one item to performing activity in daily life, and one item to protecting life and property. The responses were five-level rating scales (1-5) for all except item 9 (ten-level rating scales) which asked about the overall feeling secure from "no secure" to 'feeling the most secure'. The overall score and that for each question score were recalculated to 1-100 for interpretation. The high score means a high feeling of security, and the low score means a low feeling of security.

Short Form Health Survey-36 Questionnaire (SF-36) version 2, in Thai version (Jirarattanaphochai, Jung, Sumannanont, & Saengnipanthkul, 2005) was used. The 36-item questionnaire consisted of two dimensions to assess eight health concepts: 21 items with dimensions of physical health summary scale and 14 items with dimensions of mental health summary scale. In addition, one item was asked about the subject's own health compared to the last year. The items of each dimension were scored between 0 (the worst) and 100 (the best). A high score indicated a 'high QoL', and a low score indicated a 'low QoL'.

All questionnaires were examined for validity and reliability. The contents of the questionnaires were validated by three experts, and revised according to experts' suggestion.

The Social Support Questionnaire, the Perceived Security of Life in the Unrest Areas Questionnaire, and the SF-36 Questionnaire were tested for reliability using Cronbach's alpha, yielding values of .75, .92 and .90, respectively.

Descriptive statistics and hierarchical multiple regression were used to analyze data and test the predictive power of influencing factors on QoL of trauma survivors in the unrest of the southernmost provinces. Statistical significance was set at $\alpha = .05$.

Results

Demographic and Health Data

The sample comprised mostly male (75%), married (71.2%), and had a mean age of 40.72 years. More than half (57.6%) were Muslim and 39.4% had completed high school. The mean time after injury was 2.7 years. Based on the injury severity score (ISS) from Deep South Watch baseline information of 56 out of 132 trauma survivors (42.4%), 10.6% were reported as having seriously trauma and 37.9% having movement disability. About 71.2% of the sample had health problems after injury such as bodily pain (20.5%) and other health problems (24.2%). About one-third (37.1%) were employed before injury, but the number of unemployed was high after injury (43.2%), and 4.2% with no income except the allowance from the government. For family income, 77.3% had an income that was lower than 15,000 baht/month (about 500 US/month). Moreover, almost all trauma survivors had no history of losing a family member from the unrest (95.5%). Almost half of them were living in villages in high risk areas of terrorist attack.

Factors Influencing Quality of Life

After the assumptions were met, two set of variables were entered into the regression model. The first set contained the five personal factors (1-5) and this was followed by another set of two environmental factors (6-7). Personal factors could explain 42% of the variance of QoL (adjusted $R^2 = 0.42$, $p<.01$). The first variable explaining the variance of QoL was disability ($\beta = -0.40$, $p < .01$). The second was being employed ($\beta = 0.33$, $p < .01$). In addition, environmental factors were significantly explained more 5% of the variance of QoL (adjusted $R^2 = 0.05$), with perceived security of life in the unrest ($\beta = 0.17$, $p < .05$) and followed by social support ($\beta = 0.15$, $p < .05$). Furthermore, all variables together significantly explained 47% of the variance of QoL (adjusted $R^2 = 0.47$, $p < .01$) (Table 1).

Table 1

Hierarchical Multiple Regression of Quality of Life and the Study Variables (N=132)

Variables	B	β	t
Personal factors			
Jobs (employed)	14.49	.33	3.78**
Economic status	2.25	.04	.62
Experience of losing family members	-13.29	-.13	-1.86
The period of being injured	-1.42	-.13	-1.87
Disability (disabled)	-18.05	-.40	-5.39**
R^2		.45	
Adjusted R^2		.42	
Adjusted R^2 change		.45	
F change		16.88**	
Environmental factors			
Social support	.22	.15	2.08*
Perceived security	.21	.17	2.48*
R^2		.50	
Adjusted R^2		.47	
Adjusted R^2 change		.05	
F change		15.39**	

Note: Constant = 30.13., *$p < .05$., **$p < .01$.

Discussion

The findings reveal that four significant factors predicted the QoL of trauma survivors from unrest in the southernmost provinces, namely disability, employment, social support, and feeling secure from the unrest. Together, these could explain 47% of the variance of QoL of trauma survivors, and the influence of each factor could be explained as follows.

With regard to personal factors, disability and employment significantly predicted QoL. Disability was found to be a negative factor affecting physical functioning, performance, independence, and employment after injury. Consequently, survivors who had increased the disability reported lower QoL because they felt that they were a family burden, had lost their personal values, experienced unhappiness caused by disability and the current symptoms, and suffered from depression. These emotions could negatively influence their QoL (Suwanmontri, Masingboon, & Duangpaeng, 2008). A previous study also indicated similar result that disability extremely affected QoL of trauma survivors in the long term (Christensen, Banner, Lefering, Vallejo-Torres, & Morris, 2011).

Since jobs (employment) can help people to earn money, the survivors who were employed had better QoL than the unemployed. In this study 43.2% of survivors were disabled and 71.2% had health problems after their injury which added to their difficulty in life, giving them no chance to get a job and receiving only minimal allowance from the government. In addition, most survivors (75%) were males, who were previously the bread winners of the households. Unemployment rendered them unable to maintain the duty of being good heads of their families and taking care their family members, which may lead to lower QoL. This is similar to the study of paraplegia survivors which showed that 58% of them could not work after their injuries and this then affect QoL (Jongbloed, Backman, Forwell, & Carpenter, 2007).

The trauma survivors from the unrest in the southernmost provinces who received good social support had better QoL than those who lacked social support. The social support and perceived security of life in the unrest were able to explain an additional 5% the variance in QOL. This was partly because social support enabled them to have balanced emotions, make suitable health decisions, be patient with their problems, and be able to cope with problems and make a better life (House, 1981). In general, appraisal, information and materials of social support were mostly provided by friends, neighbors, and government and non-government sectors, for instance, staff from various organizations such as the Healing Center for people affected by the unrest, hospitals, Office of Social Development and Human Security, Sub-district Administrative Organization, and National Health Security Office which gave a hand for finance, mental aid and jobs (Chongsuvivatwong et al., 2014). These results were relevant to a previous study (Xiong, Chaojie, & Ningxiu, 2010) that found the most important aspect of social support for disabled survivors was emotional support, and was able to explain much of the variance in QoL.

The perceived security in life in the unrest area had also a direct effect on QoL of trauma survivors. As Maslow (1970) said, everyone needs to feel secure and live in a safe environment. Although the trauma survivors in this study encountered violence in their villages once or twice a year (48.5%), they felt safe when they were at home, and felt the least secure when going outside. Since the overall feeling of being secure in life and property from the unrest was most of greatest concern (Buddhachart, 2007), these unrest situations may

cause them to feel difficulty in getting access to rehabilitation services for their physical health and care and this could reduce their QoL. The results are consistent with those of the study of Kittiwiboon (2007), who found that feeling insecure was reported among soldiers, religious leaders and community people working in unrest areas. It showed that the unrest in the southernmost provinces considerably affected people's daily life due to feeling insecure in life and property, stress, worry about the situation and unhappiness in life, reducing their happiness to the lowest level. Similarly, previous research showed that 89.9% of people in the four southernmost provinces were stressful from feeling insecure in life and property, so they were nervous, and scared of attacks (Thongpethsri, Prabkree, & Chatarat, 2005). Hence, the environmental factors also affected the QoL.

However, some personal characteristics, namely the time after injury, experience of losing family members from the unrest, and the severity of injury could not explain the variance of QoL of the trauma survivors. This may be because the time after injury was an average of 2.7 years ($SD = 2.04$) and the survivors were disabled with other health problems. Despite one year having passed, they still spent their lives in the unrest areas continuously. These results are similar to those of the study of survivors who had spinal cord injuries, among whom it was found there were no differences in QoL as time passed (Leduc & Lepage, 2002; Sallcić, Kucukalic, & Mehmedbasić, 2007). In addition, 95.5% of the trauma survivors had no experience of losing their family members, thus the majority were not faced with the mental health threat that they would have faced if they had lost their husbands or wives– situations which cause extreme mental health threat (Brysiewicz, 2008).

The QoL could also not be explained by severity of injury because only 56 out of 132 survivors (42.4%) could be followed up for injury severity scores (ISS). Due to small subjects of trauma survivors with ISS, and no relationship between injury severity and QoL was found and this became a limitation of the study. Among those with data on injury severity, 27.3% had injury severity at a low level, while 10.6% had injury severity at a high level. This finding was similar to the result of a previous study by Sluys et al. (2005).

Limitation

The major limitation was that recruited subjects were approved by staff in the areas where there were safe places for the researchers to approach or travel or were low risk areas. Thus, this study could not cover all trauma survivors from other places. Furthermore, the incomplete data on injury severity recorded in the trauma survivor database could limit the ability to identify predictors and also could introduce bias. In addition, the findings may not be generalized to other settings because data collection was done in the four southern provinces of Thailand.

Conclusion and Recommendation

It is crucial to promote QoL of trauma survivors from the unrest in the southernmost provinces. Factors affecting QoL were personal–disability, jobs–and environmental–social support and perceived security of life in the unrest situation. The findings suggest that both physical and mental health should be provided especially for disabled trauma survivors by integration among various organizations for continuous rehabilitation and strengthening of their capacity for income generation. In addition, to enhance the feeling of security in

travelling and being safe for daily living after injury, the policy level should be targeted and a supportive care system after discharge should be established.

Acknowledgements

References

Aitken, L. M., Davey, T. M., Ambrosed, J., Connelly, L. B., Swanson, C., & Bellamy, N. (2007). Health outcomes of adults 3 months after injury. *Injury, 38*(1), 19-26.

Alves, A. L., Salim, F. M., Martinez, E. Z., Martinez, E. Z., Passos, A. D., De Carlo, M. M., et al. (2009). Quality of life in trauma victims six months after hospital discharge. *Revista de Saúde Públication, 43*, 1-6.

Boontakool, P., Lertpaiboon, J., & Intanon, T. (2008). Loss and grief: Experiences of windows in the tsunami disaster. *Songklanakarind Nursing Journal, 28*(1), 45-59.

Brysiewicz, P. (2008). The lived experience of losing a loved one to a sudden death in KwaZulu-Anatal, South Africa. *Journal of Clinical Nursing, 17*(2), 224-31.

Buddhachart, P. (2007). Factors influencing quality of life of physicians in the three southern border provinces of Thailand. *Songklanagarind Medical Journal, 25*(1), 29-37.

Chaichana, Y., Sindhu, S., Chayaput, P., & Songcharoen, P. (2008). Predicting factors to quality of life of patients with brachail plexus injury post reconstructive surgery. *Siriraj Medical Journal, 61*, 43-46.

Chongsuvivatwong, V., Boegli, L. C., & Hasuwannakit, S. (2014). *Healing under fire: The case of southern Thailand*. Bangkok: The Deep South Relief and Reconciliation (DSRR) Foundation and the Rugiagli Initiative.

Christensen, M., Banner, C., Lefering, R., Vallejo-Torres, L., & Morris, S. (2011). Quality of life after severe trauma: Results from the global trauma trial with recombinant factor VII. *Journal of Trauma, 70*, 1524-1531.

Dimopoulou, I., Anthi, A., Mastora, Z., Theodorakopoulou, M., Konstandinidis, A., Evangelou, E., et al. (2004). Health-related quality of life and disability in survivors of multiple trauma one year after intensive care unit discharge. *American Journal of Physical Medicine & Rehabilitation, 83*(3), 171-176.

Ferrans, C. E., Zerwic, J. J., Wilbur, J. E., & Larson, J. L. (2005). Conceptual model of health-related quality of life. *Journal of Nursing Scholarship, 37*(4), 336-342.

House, J. (1981). *Work stress and social support*. California: Addison-Wesley.

Jirarattanaphochai, K., Jung, S., Sumananont, C., & Saengnipanthkul, S. (2005). Reliability of the medical outcomes study short-form survey version 2.0 (Thai version) for the evaluation of low back pain patients. *Journal of Medical Association Thailand, 88*(10), 1355-1361.

Jitpiromsri, S. (2010). Deep South. Retrieved July 13, 2015, from http://www.deepsouth watch.org/node/730

Jongbloed, L., Backman, C., Forwell, S. J., & Carpenter, C. (2007). Employment after spinal cord injury: The impact of government policies in Canada. *Work, 29*(2), 145-154.

Kaewnui, S. & Panatnashi, S. (2014). *Annual report of unrest events in Southern Thai Borders*. Deep South Watch, Research Center of Conflict and Southern Cultural Diversity Studies: Prince of Songkla University, Pattani Campus.

Kittiwiboon, T. (2007). Unrest situations in the three southern border provinces: Comparison of beliefs about the causes and suggestions among different religious practitioners during working duty. *Journal of Social Development, 9*(1), 30-84.

Leduc, B., & Lepage, Y. (2002). Health-related quality of life after spinal cord injury. *Disability and Rehabilitation, 24*(4), 196-202.

Maslow, A. (1970). *Motivation and personality*. New York: Harper & Row.

Richmond, T., Kauder, D., Hinkle, J., & Shults, J. (2003). Early predictors of long-term disability. *American Journal of Critical Care, 12Z*, 197-205.

Sallcić, D., Kucukalic, A., & Mehmedbasić, A. (2007). Quality of life and coping strategies characteristics within war torture survivors. *Medical Archives, 6*, 224-229.

Schnurr, P., Lunney, C., Bovin, M., & Marx, B. (2009). Posttraumatic stress disorder and quality of life: Extension of findings to veterans of the wars in Iraq and Afghanistan. *Clinical Psychology Review, 29*, 727-735.

Sluys, K., Häggmark, T., & Iselius, L. (2005). Outcome and quality of life 5 years after major trauma. *Journal of Trauma-Injury Infection & Critical Care, 59*, 223-232.

Songwathana, P., Watanasiriwanich, W., & Kritrungrote, L. (2013). Holistic self care for rehabilitation experienced by Thai Buddhist trauma patients in area of political and social unrest. *Journal of Trauma Nursing, 20*(4), 203-207.

Suwanmontri, P., Masingboon, K., & Duangpaeng, S. (2008). Factors related to health status of moderate traumatic brain injury patients in rehabilitation phase. *The Journal of Faculty of Nursing Burapha University, 16*(1), 34-50.

The WHOQOL Group. (1998). The World Health Organization Quality of Life assessment (WHOQOL): Development and general psychometric properties. *Social Science Medicine, 46*(12), 1569-1585.

Thongchan, J., Wae, N., Musigawan, A., Aranpak, A., & Samranrat, J. (2008). *Research report : Evaluation the activities of family visiting in the program of healing mental health in the activities of family visiting in the program of heading mental health in the trauma survivors from unrest area of southernmost province*. Yala, Thailand: Boromarajonani College of Nursing.

Thongpethsri, N., Prabkree, S., & Chatarat, S. (2005). *Stress and demands on mental health promotion of people in four southern border provinces regarding the unrest situations*. Songkla, Thailand: Mental Health Center Region 12.

Thongsook, L., Wachirawat, W., Pookboonmee, R., & Masingboon, K. (2006). Factors affecting quality of life among Thai Amputees. *The Journal of Faculty of Nursing Burapha University, 14*(2), 62-72.

Thorndike, R. (1987). *Correlational procedures for research*. New York: Gardner Press.

Xiong, K., Chaojie, L., & Ningxiu, L. (2010). Social support and quality of life: A cross-sectional study on survivors eight months after the 2008 Wenchuan earthquake. *BioMed Central Public Health, 10*, 573.

Wilson, I. B., & Cleary, P. D. (1995). Linking clinical variables with health-related quality of life: A conceptual model of patient outcomes. *The Journal of the American Medical Association, 273*(1), 59-65.

Yodchai, K., Nakdum, P., & Thaniwattananon, P. (2007). Injured experience, impact and management of the victims and their families from the bomb in Hatyai district. *Songklanagarind Medical Journal, 25*(3), 211-223.