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

Praneed Songwathana¹, Luppana Kitrungrote², and Natenapha Khupantawee²

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
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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 (Jirarattanapochai, 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 ($\text{adjusted } R^2 = 0.42, p < .01$). 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 ($\text{adjusted } R^2 = 0.05$), 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 ($\text{adjusted } R^2 = 0.47, p < .01$) (Table 1).
Table 1

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

<table>
<thead>
<tr>
<th>Variables</th>
<th>B</th>
<th>β</th>
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<tbody>
<tr>
<td>Personal factors</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Jobs (employed)</td>
<td>14.49</td>
<td>.33</td>
<td>3.78**</td>
</tr>
<tr>
<td>Economic status</td>
<td>2.25</td>
<td>.04</td>
<td>.62</td>
</tr>
<tr>
<td>Experience of losing family members</td>
<td>-13.29</td>
<td>-.13</td>
<td>-1.86</td>
</tr>
<tr>
<td>The period of being injured</td>
<td>-1.42</td>
<td>-.13</td>
<td>-1.87</td>
</tr>
<tr>
<td>Disability (disabled)</td>
<td>-18.05</td>
<td>-.40</td>
<td>-5.39**</td>
</tr>
<tr>
<td>R²</td>
<td>.45</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Adjusted R²</td>
<td>.42</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Adjusted R² change</td>
<td>.45</td>
<td></td>
<td></td>
</tr>
<tr>
<td>F change</td>
<td>16.88**</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Environmental factors</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Social support</td>
<td>.22</td>
<td>.15</td>
<td>2.08*</td>
</tr>
<tr>
<td>Perceived security</td>
<td>.21</td>
<td>.17</td>
<td>2.48*</td>
</tr>
<tr>
<td>R²</td>
<td>.50</td>
<td></td>
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<tr>
<td>Adjusted R²</td>
<td>.47</td>
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<td>Adjusted R² change</td>
<td>.05</td>
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<tr>
<td>F change</td>
<td>15.39**</td>
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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; Šaličić, 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.

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