

# A cross-sectional community study of post-traumatic stress disorder and social support in Lao People's Democratic Republic

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**Objective** To estimate post-traumatic stress disorder (PTSD) symptoms in those injured and not injured by landmines or unexploded ordnance (UXO) in rural Lao People's Democratic Republic and to determine whether the perception of social support was associated with PTSD symptom severity.

**Methods** A community survey was conducted among 190 people injured by landmines or UXO and 380 age-, sex- and neighbourhood-matched non-injured individuals in the Sepone district of Savannakhet Province, the part of the Lao People's Democratic Republic most heavily bombed during the Viet Nam War. Using the Harvard Trauma Questionnaire and the Medical Outcomes Study Social Support Survey, trained health-care workers conducted face-to-face interviews to assess PTSD symptoms and level of perceived social support. Multiple linear regression was performed to explore the association between social support and other factors and PTSD.

**Findings** The prevalence of PTSD was higher among the injured (10%) than among the non-injured (4%), but the level of perceived social support was not significantly different between the two groups. A higher level of perceived social support was associated with milder symptoms of PTSD. Women, older people and those with a formal education were more often and more severely affected by PTSD.

**Conclusion** The perception of strong social support might help to alleviate the symptoms of PTSD among people injured by landmines or UXO in rural parts of the Lao People's Democratic Republic. Psychosocial interventions should be incorporated in assistance for the injured because they have more severe and longer-lasting symptoms of PTSD than the non-injured.

Abstracts in **عربي**, **中文**, **Français**, **Русский** and **Español** at the end of each article.

## Introduction

Landmines and unexploded ordnance (UXO) cause great suffering among civilian populations around the world. As of October 2012, 71 states and six other territories were suspected of being – and confirmed to be – mined.<sup>1</sup> In 2011, a total of 4286 new casualties, including at least 1320 deaths, were recorded in 61 states and territories; 72% of these occurred among civilians and 42% of all civilian casualties were children.<sup>1</sup> Most victims of landmine or UXO explosions suffer horrendous disfigurement and severe psychological sequelae. Work, education and opportunities for social interaction are largely beyond their reach and they require long-term health care for their recovery, which imposes a huge financial burden on them and their families.<sup>2,3</sup>

The Lao People's Democratic Republic is one of the countries that have been most heavily bombed.<sup>4</sup> From 1964 to 1973, during the Viet Nam War, more than 270 million cluster submunitions were dropped on the country. As many as 30% of the dropped bombs failed to detonate, became UXO, and caused many human casualties. Between the beginning of that war and 2008, landmines and UXO caused 50 136 human casualties; 29 410 (59%) of them were deaths. Forty per cent of all the casualties – i.e. 20 008 casualties – have occurred since 1974.<sup>5</sup>

Although casualties caused by landmines and UXOs have been extensively documented, studies conducted so far have focused primarily on epidemiological patterns and risk factors.<sup>6-9</sup> Findings from these studies provide informa-

tion that is useful for planning measures to prevent injuries caused by landmines and UXO and improving trauma care systems, but the psychosocial consequences of the injuries and the reintegration of victims into society require much further research. According to studies, injured victims are likely to develop mental health problems, such as depression and post-traumatic stress disorder (PTSD), as a result of their trauma.<sup>10-12</sup> Such victims often face societal barriers because of their physical and mental disabilities, despite the importance of support for their social reintegration.<sup>2,3,13</sup> So far, little research has been carried out on how victims view social support and its influence on their mental health. Moreover, previous studies, in which injured victims were not compared with non-injured controls, did not fully estimate the severity of the mental health problems among the victims. Absolute scores and their cut-off points in psychometric measurement scales may differ by culture. Thus, accurate estimation requires calibration in a general population by comparison with non-victims.<sup>14</sup> A recent study in Cambodia stands alone in having compared the mental health of landmine survivors with that of the general population. Its findings suggest that mental health status was worse among landmine survivors.<sup>15</sup>

We conducted a cross-sectional community survey to compare people injured by landmines or UXO with non-injured counterparts with respect to their perceived social support and the severity of their PTSD symptoms and to determine whether a relationship exists between the degree of perceived support and PTSD symptom severity.

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## Methods

### Setting

The Lao People's Democratic Republic is a landlocked country located in south-eastern Asia. It has a population of approximately 6 million and shares borders with five countries, including Viet Nam.<sup>16</sup> During the Viet Nam War military supply lines known as the "Ho Chi Minh Trail" were established between North and South Viet Nam through Cambodia and the Lao People's Democratic Republic. From 1964 to 1973, aerial bombardments were conducted to destroy the trail and, since a large part of it was in the Lao People's Democratic Republic, the country suffered heavy bombing during the war.

Savannakhet is the largest province in the country, with a population of about 700 000. It was a focal point of the war and major land battles took place in its three eastern districts. Of the three districts, Sepone, located in the most easterly part of the province and on the border with Viet Nam, was the most heavily bombed because of the presence of the trail. We conducted a survey in Sepone, whose population is approximately 45 000.

### Participants

Study participants were residents of Sepone who were at least 18 years old and who had or had not been injured by landmines or UXO as civilians. For every injured individual we selected two non-injured individuals who were matched with the injured for age, sex and neighbourhood of residence. The injured were identified through the government's National Regulatory Authority for the UXO/Mine Action Sector, which keeps a registry of people injured by landmines or UXO. In Sepone district, 218 injured people had been identified in 56 of the 88 villages as of 2008. One of the 56 villages was excluded from our study because it was located in a remote, mountainous area. We conducted a community survey from May to June 2011 and identified 192 injured people in the 55 remaining villages. Two of them did not complete the questionnaire. Thus, we had a total of 190 injured participants.

The non-injured were recruited from the same village as each of the injured. Random sampling of non-injured people was not feasible because a list of residents with demographic information, such as age and sex, was not available, so for every injured person we recruited from

the nearest households two non-injured persons of the same sex and age (within two years).

### Sample size

In the Lao People's Democratic Republic, no epidemiological data on mental health are available, even for survivors of landmines or UXO. According to a systematic review of surveys on mental disorders among refugees resettled in western countries, the prevalence of PTSD in this population is 9% and ranges from 3% to 18%.<sup>17</sup> A survey in post-conflict settings revealed that the prevalence of PTSD ranges from 16% to 37%.<sup>18</sup> On the assumption that the prevalence of PTSD prevalence is 15% among the injured and 5% among the non-injured, we calculated that at least 160 participants were required for each group, given an  $\alpha$  of 0.05 (two-sided) and a power of 0.8.

### Data collection

In the target villages, we contacted the village chief and explained the study's aim and procedures. We informed injured people and their neighbours through the village chief that we wished to interview them for the study. Trained health workers from health centres, the district hospital and the district health office visited injured and non-injured people in their homes and requested their participation after explaining the purpose of the study. The workers made sure that each person understood that they were free to skip any questions they did not want to answer and that their answers would be kept anonymous. We did not obtain any identifying information from participants. The health workers conducted a face-to-face interview with the participants in their homes or any place of their choice using a structured questionnaire. Interviews were conducted in the local dialect when needed to ensure that the participants understood the questions. Ethical approval for the survey was obtained from the National Ethics Committee for Health Research at the Ministry of Health of the Lao People's Democratic Republic.

### Measures

The questionnaire included questions about demographic characteristics (age, sex, education, marital status and occupation), general health status, PTSD symptoms and perceived social support. In addition, based on the survey form

employed by the National Survey of UXO and Accident Phase 1 conducted in 2008, we asked injured people how old they were and what they were doing when they were injured by the landmine or UXO, as well as the body part that was injured, whether they had suffered amputation or paralysis, and the type of assistance they had received and its source.

We assessed PTSD symptoms using the Harvard Trauma Questionnaire (HTQ). The HTQ includes 16 diagnostic criteria based on the fourth edition of the *Diagnostic and statistical manual of mental disorders* (DSM-IV).<sup>19,20</sup> Respondents reported whether they had been bothered by PTSD symptoms in the past week and scored each symptom on a four-point scale from "not at all" (1 point) to "extremely" (4 points). The scale score ranges from 1 to 4. We used a version of the HTQ that had been validated among Lao People's Democratic Republic refugees. A score greater than 2.50 was indicative of a probable case of PTSD.<sup>19,20</sup>

To identify PTSD cases, we also used the algorithm method that replicated DSM-IV criteria for the diagnosis of PTSD.<sup>20,21</sup>

We measured social support using the Medical Outcomes Study Social Support Survey.<sup>22</sup> This scale comprises 19 items that measure the availability of four kinds of support, each illustrated by an example: (i) tangible support (4 items [e.g. "Someone to help you if you were confined to bed"]); (ii) affectionate support (3 items [e.g. "Someone who shows you love and affection"]); (iii) emotional or informational support (8 items [e.g. "Someone to give you good advice about a crisis"]); and (iv) positive social interaction (4 items [e.g. "Someone to have a good time with?"]). Three Laotians reviewed the content validity of the scale. They excluded one item under affectionate support ("Someone who hugs you") because it was found to be culturally unsuitable for the Lao People's Democratic Republic. The scale was then translated from English to Lao and back translated for accuracy. The perceived availability of each type of support was assessed on a 5-point scale, from "none of the time" (1 point) to "all of the time" (5 points). Subscale and overall scale scores were rescaled to a range from 0 to 100, with higher scores indicating greater support.

### Analysis

We compared demographic characteristics, perceived social support and PTSD scores between the injured and

non-injured using the *t*-test or  $\chi^2$  test. We calculated the mean difference in social support and in PTSD scores and the 95% confidence intervals (CIs) for the differences in means. Risk ratios (RRs) for PTSD and their 95% CIs were also calculated. We also described the circumstances and consequences of landmine/UXO injury among injured participants.

Some of the older individuals were exposed to the aerial bombardments that were conducted until 1973 during the Viet Nam War – they were exposed to the war, in short – and this would expectedly have influenced their PTSD scores. To assess the effect of having been injured independently of having been exposed or not exposed to the war, we compared PTSD scores in the injured and non-injured separately for people born in 1973 or earlier and for people born after 1973. Similarly, to assess the effect of war exposure on PTSD score, we compared PTSD scores among the injured and non-injured separately for those who had and had not been exposed to the war.

Finally, we examined whether perceived social support was associated with PTSD score, controlling for sex, marital status, and education, and whether exposure to the war (i.e. born in 1973 or earlier) and landmine or UXO injury were associated with PTSD score. To check for an association between these variables and PTSD score we used multiple linear regression analysis, using four interaction terms to investigate whether the level of perceived social support on PTSD score differed by injury status, age or sex, and whether the influence of injury status on PTSD score differed in accordance with exposure or non-exposure to the war. For this analysis, we computed two-way interaction terms by mean centring – to make results easier to interpret – and by multiplying perceived social support score by injury status, age and sex, and injury status by war exposure. We also examined the association between perceived social support and PTSD score separately for the injured and non-injured.

## Results

Table 1 shows the characteristics of the 190 injured and 380 non-injured individuals. The injured and the non-injured did not differ significantly in age, sex, education, marital status and current

Table 1. Characteristics of injured and non-injured residents of Sepone district in study of mental health in those injured and not injured by landmines and unexploded ordnance, Lao People's Democratic Republic, 2011

Characteristic	No. (%) of injured <sup>a</sup> ( <i>n</i> = 190)	No. (%) of non-injured <sup>b</sup> ( <i>n</i> = 380)
<b>Sex</b>		
Male	166 (87)	332 (87)
Female	24 (13)	48 (13)
<b>Age (years)</b>		
18–29	28 (15)	53 (14)
30–39	33 (17)	70 (18)
40–49	28 (15)	59 (16)
50–59	38 (20)	73 (19)
60–69	39 (21)	84 (22)
70–79	15 (8)	22 (6)
≥ 80	9 (5)	19 (5)
<b>Marital status</b>		
Married	150 (79)	319 (84)
Widowed	23 (12)	36 (9)
Single	15 (8)	21 (6)
Divorced/separated	2 (1)	4 (1)
<b>Education</b>		
None	96 (51)	199 (52)
Primary school	69 (36)	132 (35)
Secondary school	23 (12)	45 (12)
Higher education	2 (1)	4 (1)
<b>Current occupation</b>		
Farmer	170 (89)	352 (93)
Housewife	7 (4)	10 (3)
Teacher	3 (2)	1 (0)
Student	2 (1)	5 (1)
Soldier	2 (1)	3 (1)
Unemployed	2 (1)	2 (1)
Labourer	2 (1)	1 (0)
Government worker	1 (1)	2 (1)
Scrap metal trader	1 (1)	1 (0)
Health worker	0 (0)	1 (0)
Forester	0 (0)	1 (0)
Miner	0 (0)	1 (0)
<b>General health<sup>c,d</sup></b>		
Excellent	28 (15)	90 (24)
Very good	66 (35)	152 (40)
Good	43 (23)	84 (22)
Fair	46 (24)	48 (13)
Poor	7 (4)	6 (2)
<b>Age at injury (years)</b>		
< 10	23 (12)	–
10–19	73 (38)	–
20–29	42 (22)	–
30–39	29 (15)	–
≥ 40	23 (12)	–
<b>Years since injury</b>		
< 10	31 (16)	–
10–19	30 (16)	–
20–29	30 (16)	–
30–39	55 (29)	–
≥ 40	44 (23)	–

<sup>a</sup> Civilian residents of Sepone district at least 18 years old injured by landmines or unexploded ordnance.

<sup>b</sup> Civilian residents of Sepone district at least 18 years old not injured by landmines or unexploded ordnance.

<sup>c</sup> Self-rated.

<sup>d</sup> *P* < 0.01. No other general characteristic was significantly different between the injured and non-injured.

Table 2. **Perceived social support and post-traumatic stress disorder (PTSD) scores among residents of Sepone district injured and not injured by landmines and unexploded ordnance, Lao People's Democratic Republic, 2011**

Social support/PTSD	Mean score <sup>a</sup>		Difference in means (95% CI)
	Injured <sup>b</sup>	Non-injured <sup>c</sup>	
<b>Perceived social support</b>	71.7	72.7	-1.00 (-3.58 to 1.58)
Tangible support	87.7	87.7	0.02 (-2.51 to 2.54)
Affectionate support	72.7	73.3	-0.59 (-3.68 to 2.50)
Emotional/informational support	68.0	69.1	-1.10 (-4.36 to 2.16)
Positive social interaction	62.4	64.5	-2.11 (-5.30 to 1.09)
<b>PTSD score</b>	2.01	1.72	0.29 (0.22 to 0.36)

CI, confidence interval.

<sup>a</sup> PTSD symptoms were measured with the Harvard Trauma Questionnaire.<sup>19,20</sup> Social support was measured with the Medical Outcomes Study Social Support Survey.<sup>22</sup> PTSD scores range from 1 to 4 and social support scores, from 0 to 100.

<sup>b</sup> Civilian residents of Sepone district at least 18 years old injured by landmines or unexploded ordnance.

<sup>c</sup> Civilian residents of Sepone district at least 18 years old not injured by landmines or unexploded ordnance.

occupation, but self-reported general health was better among the non-injured than among the injured.

Half of the injured were wounded before they were 20 years of age and 84% of them had been injured more than 10 years before. Most people were injured as they went about their normal daily activities, such as building a fire, farming or gardening. They were most commonly injured in the leg (41%), followed by the hand or a finger (27%) and the arm (24%). The injury resulted in an amputation in 37% of the cases and in permanent paralysis in 7%. Only 17 (9%) of the injured reported having ever received assistance – primarily from the government and from nongovernmental organizations – in the form of physical therapy, a prosthesis or crutches, vocational training, microcredit or business advice. Most of the injured who received assistance (13/17) had had an amputation.

Table 2 shows perceived social support scores and PTSD scores among the injured and non-injured. Perceived level of social support was similar in both groups, but the mean PTSD score was significantly higher among the injured. The prevalence of PTSD was also significantly higher among the injured (10%) than among the non-injured (4%) (RR: 2.25; 95% CI: 1.17 to 4.31). We obtained similar results when we applied the algorithm method: 14% prevalence among the injured and 5% among the non-injured (RR: 3.00; 95% CI: 1.70 to 5.31).

As shown in Table 3, the injured had a significantly higher mean PTSD score than the non-injured, independent of

exposure to the Viet Nam War. Similarly, residents of Sepone who had experienced the war had a significantly higher mean PTSD score than those who had not, whether they were injured or not.

Table 4 shows the association between perceived social support score and other variables on the one hand, and PTSD score on the other. Of all the covariates, having been injured by a landmine or UXO showed the strongest association with PTSD score. Those people who perceived a higher level of social support had milder symptoms of PTSD. Women, people exposed to the war and people who had a formal education had significantly higher PTSD scores. None of the interaction terms showed significance (data not shown): the influence of perceived social support on PTSD did not differ as a function of injury status, age or sex, and the influence of injury status on PTSD did not differ as a function of war exposure. In a separate analysis by injury, perceived social support was found to be related to PTSD among both the injured and the non-injured.

## Discussion

The injured had more severe PTSD than the non-injured, and those who perceived a higher level of social support, whether injured or not, had milder symptoms of PTSD. This suggests that perceived social support can contribute to recovery from PTSD.<sup>3,13,23,24</sup> Whether perceived social support buffered the psychological effects of injury on PTSD could not be determined with certainty

because we found no difference between the injured and non-injured in terms of the influence of perceived social support on PTSD. It is possible that we were unable to identify any buffering effect because the study was cross-sectional; most of the injured had sustained their injuries more than 10 years before the study and their perception of social support could have changed since the time they were injured.

Despite the long time that has transpired since the Viet Nam War and since most of the injuries were sustained, PTSD symptoms still persist among people who were injured and even among people who were not injured but who experienced the war. Psychiatric symptoms can persist for many years after severely traumatic events, as suggested by epidemiological studies conducted among refugees from south-eastern Asia who resettled in Australia and the United States of America, although the studies also showed that psychiatric symptoms gradually decline during resettlement.<sup>25-27</sup> Importantly, war can also have long-lasting psychological effects. Our findings suggest that experiencing the Viet Nam War worsened PTSD symptoms, independent of injury status (i.e. not only among the injured but also among the non-injured). In fact, people who were both injured and exposed to the war had the highest PTSD scores. This confirms that population health can be affected by the experience of war even after a war has ceased.

The level of perceived social support was not significantly different between the injured and non-injured. This interesting finding suggests that most of the people injured in the study area are not isolated from society. In mine-affected countries other than the Lao People's Democratic Republic, landmine survivors often experience disruption of family and social relationships.<sup>2,10,12</sup> These discrepant findings may be explained by differences between countries in terms of history and sociocultural norms, as well as by the timing of a survey in relation to the war and the measure used to assess social support. In rural areas of the Lao People's Democratic Republic, the social environment may prove quite supportive for injured people because of the existence of traditional village-based mutual assistance networks and the Buddhist idea of karma – i.e. making merits for another life by being charitable.<sup>28</sup>

Table 3. Mean post-traumatic stress disorder (PTSD) scores among injured and non-injured residents of Sepone district, by exposure or non-exposure to the Viet Nam War, Lao People's Democratic Republic, 2011

Exposure to war	Mean PTSD score		Difference in means <sup>a</sup> (95% CI)
	Injured <sup>b</sup>	Non-injured <sup>c</sup>	
Exposed	2.07	1.79	0.28 (0.19 to 0.37)
Not exposed	1.89	1.57	0.32 (0.20 to 0.48)
<b>Difference in means<sup>d</sup> (95% CI)</b>	<b>0.18 (0.06 to 0.31)</b>	<b>0.22 (0.14 to 0.30)</b>	–

CI, confidence interval.

<sup>a</sup> Difference between those injured and not injured.<sup>b</sup> Civilian residents of Sepone district at least 18 years old injured by landmines or unexploded ordnance.<sup>c</sup> Civilian residents of Sepone district at least 18 years not injured by landmines or unexploded ordnance.<sup>d</sup> Difference between those exposed and not exposed to the Viet Nam War.

Table 4. Association of perceived social support score and other variables with post-traumatic stress disorder (PTSD) score among those injured, those not injured and both combined, Lao People's Democratic Republic, 2011

Characteristic	All		Injured <sup>a</sup>		Non-injured <sup>b</sup>	
	$\beta^c$	$B^d$ (95% CI)	$\beta^c$	$B^d$ (95% CI)	$\beta^c$	$B^d$ (95% CI)
Injury status	0.305	0.280 (0.213 to 0.347)	–	–	–	–
War exposure	0.199	0.185 (0.115 to 0.254)	0.201	0.177 (0.055 to 0.299)	0.214	0.189 (0.104 to 0.274)
Sex	–0.153	–0.200 (–0.298 to –0.101)	–0.194	–0.240 (–0.415 to –0.065)	–0.144	–0.178 (–0.298 to –0.057)
Marital status	–0.061	–0.069 (–0.154 to 0.015)	–0.091	–0.091 (–0.230 to 0.048)	–0.048	–0.054 (–0.162 to 0.054)
Education	–0.126	–0.109 (–0.174 to –0.045)	–0.092	–0.076 (–0.191 to 0.040)	–0.154	–0.127 (–0.206 to –0.047)
Perceived social support score	–0.183	–0.005 (–0.008 to –0.003)	–0.189	–0.005 (–0.009 to –0.001)	–0.195	–0.005 (–0.008 to –0.003)

CI, confidence interval.

<sup>a</sup> Civilian residents of Sepone district at least 18 years old injured by landmines or unexploded ordnance.<sup>b</sup> Civilian residents of Sepone district at least 18 years not injured by landmines or unexploded ordnance.<sup>c</sup> Standardized regression coefficient.<sup>d</sup> Unstandardized regression coefficient.

Note: The coefficients, generated through multiple logistic regression, reflect estimated differences in mean PTSD score between the injured and non-injured; those exposed and not exposed to the Viet Nam war; males and females; married and non-married individuals, people with no education and with some education; and as a function of perceived social support score.

The fact that women had a higher mean PTSD score than men is worth noting. Women may have experienced sources of psychological trauma that were not explored in the present study. Sexual violence and rape, for example, are both widespread in times of war.<sup>29</sup> In rural parts of the Lao People's Democratic Republic, intimate partner violence has been found to be quite common.<sup>30</sup>

A worrisome finding is that injured participants received insufficient assistance, particularly of a psychosocial nature. Victims living in remote areas often face geographical barriers to receiving assistance. Moreover, such assistance consists primarily of the provision of physical rehabilitation and prostheses and should be expanded to include psychosocial interventions, such as the development of self-help groups and human resources at the village level.<sup>12,15</sup> Demining activities have been extended to remote areas<sup>31</sup> and victim assistance

should be similarly expanded to further strengthen supportive environments for those who have been injured by landmines or UXO.

People with a formal education had a higher mean PTSD score, particularly among the non-injured. This finding was unexpected, although some studies have shown that moderate education has a protective effect against PTSD but that higher education does not.<sup>32,33</sup> In the current study, fewer than half of the participants had a formal education, and this was mostly at the primary level, so the effects of a moderate or higher level of education could not be properly assessed.

The strength of the present study lies in the use of a comparison group whose members were matched with injured individuals in age, sex and neighbourhood of residence. Since scores on psychometric tests and their cut-off points vary by culture – i.e. a given score can be indicative of PTSD in one country but not in another – studies such as

ours, in which scores among the injured and non-injured in the same population are compared, reduce the risk of bias and show the magnitude of the exposure effect more accurately than studies without a comparison group. However, the study also has several limitations. First, because it is cross-sectional, caution must be exercised when inferring causal associations between perceived social support and PTSD, since the severity of the PTSD may have influenced the level of perceived social support. Nonetheless, a positive relationship between social support and mental well-being has been well documented in general.<sup>24</sup> Second, our findings are not readily generalizable because we conducted the survey in a single district that was the most heavily bombed during the war and that had many landmine survivors. There may be differences between districts in how well survivors are reintegrated into society and how much social support they perceive. Finally, we did not explore

life events that might have caused PTSD other than injury by landmines or UXO. If injured people who were exposed to war are more likely to have experienced these other events than their non-injured counterparts, we may have overestimated the effect of landmine and UXO injuries on PTSD. We found, however, that the effect of injury on PTSD was not modified by war exposure.

In closing, we draw two major policy implications from our findings. First,

since injuries by landmines and UXO have a protracted influence on PTSD symptoms, psychosocial interventions should be incorporated into victim assistance. This is particularly necessary in remote areas of developing countries, where mental health services are rarely available. Second, there is a need to improve the prevention of landmine and UXO-related injuries by expanding demining activities and banning the use and production of landmines, because

the injuries they inflict leave psychological scars that last for long after a war has ended, to the detriment of social, economic and human development. ■

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## ملخص

دراسة مجتمعية قطاعية لاضطراب إجهاد ما بعد الصدمة والدعم الاجتماعي في جمهورية لاو الديمقراطية الشعبية العوامل واضطراب إجهاد ما بعد الصدمة.

النتائج كانت نسبة انتشار اضطراب إجهاد ما بعد الصدمة أكبر بين المصابين (10%) عن غير المصابين (4%)، ولكن مستوى الدعم الاجتماعي المتصور لم يختلف كثيراً بين المجموعتين. وكان هناك مستوى أعلى من الدعم الاجتماعي المتصور يرتبط بالأعراض الأخف لاضطراب إجهاد ما بعد الصدمة. وكانت النساء والأشخاص الأكبر والحاصلون على تعليم رسمي هم من يتأثرون في الغالب باضطراب إجهاد ما بعد الصدمة وأشد المتضررين منه. الاستنتاج ربما يساعد تصور الدعم الاجتماعي القوي في تخفيف أعراض اضطراب إجهاد ما بعد الصدمة بين المصابين بفعل الألغام الأرضية أو الذخائر غير المتفجرة في المناطق الريفية من جمهورية لاو الديمقراطية الشعبية. وينبغي إدراج التدخلات النفسية الاجتماعية في المساعدة المقدمة للمصابين لأنهم يعانون من أعراض أكثر حدة وأطول أمداً لاضطراب إجهاد ما بعد الصدمة عن غير المصابين. وأطول أمداً لاضطراب إجهاد ما بعد الصدمة عن غير المصابين.

الغرض تقييم أعراض اضطراب إجهاد ما بعد الصدمة (PTSD) لدى المصابين وغير المصابين بفعل الألغام الأرضية أو الذخائر غير المتفجرة في ريف جمهورية لاو الديمقراطية الشعبية وكذلك تحديد ما إذا كان تصور الدعم الاجتماعي له صلة بدرجة وخامة أعراض اضطراب إجهاد ما بعد الصدمة.

الطريقة تم إجراء دراسة مجتمعية على 190 مصاباً بفعل الألغام الأرضية أو الذخائر غير المتفجرة و380 شخصاً غير مصاب يتطابقون معهم من حيث العمر والجنس والجوار في منطقة سيون بمقاطعة سافانakit، ذلك الجزء من جمهورية لاو الديمقراطية الشعبية الذي تعرض للقصف الشديد أثناء حرب فيتنام. أجرى مقدمو الرعاية الصحية المدربون مقابلات وجهاً لوجه لتقييم أعراض اضطراب إجهاد ما بعد الصدمة ومستوى الدعم الاجتماعي المتصور باستخدام استبيان للصدمة ومسح الدعم الاجتماعي لدراسة النتائج الطبية. وتم إجراء الارتداد الخطي المتعدد لاستكشاف العلاقة بين الدعم الاجتماعي وغيره من

## 摘要

老挝人民民主共和国创伤后应激障碍和社会支持的横断面社区研究

**目的** 预估老挝人民民主共和国农村地区受地雷和未爆炸弹药 (UXO) 伤害和未受伤人群中的创伤后应激障碍 (PTSD) 征候，并确定社会支持的觉知是否与 PTSD 症状严重程度有关。

**方法** 在沙湾拿吉省车邦区 190 名受地雷或 UXO 伤害的个人以及 380 名年龄、性别和毗邻关系与之匹配的未受伤害个体中进行社区调查，该地区是越南战争期间老挝受到最猛烈轰炸的地区之一。经过培训的医护人员使用哈佛创伤问卷和医疗成果研究社会支持调查对被调查者进行面对面的访谈，评估 PTSD 征候和觉知社会支持的等级。执行多元线性回归，以探索社

会支持和其他因素与 PTSD 之间的关联。

**结果** 受伤者中的 PTSD 发病率 (10%) 高于未受伤者 (4%)，但是两个群体之间觉知社会支持的水平没有显著差异。更高水平的觉知社会支持与更缓和的 PTSD 症状相关。妇女、老年人和接受过正规教育的人更经常和更严重地受到 PTSD 的影响。

**结论** 对强大社会支持的觉知可能有助于缓解老挝人民民主共和国农村地区受地雷或 UXO 伤害群体的 PTSD 症状。在对受伤者的救助中应纳入心理社会干预，因为他们的 PTSD 症状比未受伤害的人更严重，更持久。

## Résumé

Une étude communautaire transversale du syndrome de stress post-traumatique et du soutien social en République Démocratique Populaire Lao

**Objectif** Estimer les symptômes de stress post-traumatiques (PTSD) chez les blessés et non blessés par des mines ou des munitions non explosées en milieu rural en République Démocratique Populaire Lao et déterminer si la perception de l'aide sociale a été associée avec la

sévérité des symptômes du stress post-traumatique.

**Méthodes** Une enquête communautaire a été menée auprès de 190 personnes blessées par des mines ou des munitions non explosées et de 380 individus non blessés appariés selon l'âge, le sexe et le quartier

dans le district de Sepone de la Province de Savannakhet, la partie de la République Démocratique Populaire Lao la plus lourdement bombardée pendant la Guerre du Viet Nam. En utilisant le Questionnaire de Harvard relatif aux Traumatismes vécus et l'Enquête sur l'Aide Sociale de l'Étude des Conséquences Médicales, des travailleurs de la santé qualifiés ont mené des entretiens en face-à-face pour évaluer les symptômes du stress post-traumatique et le niveau de l'aide sociale reçue. Une régression linéaire multiple a été effectuée afin d'étudier l'association entre l'aide sociale et d'autres facteurs et le stress post-traumatique.

**Résultats** La prévalence du stress post-traumatique est plus élevée chez les blessés (10%) que chez les non-blessés (4%), mais le niveau de l'aide sociale reçue n'était pas significativement différente entre les

deux groupes. Un niveau plus élevé d'aide sociale reçue a été associé à des symptômes plus légers de stress post-traumatique. Les femmes, les personnes âgées et les personnes ayant bénéficié d'un enseignement scolaire sont plus souvent et plus durement touchées par le stress post-traumatique.

**Conclusion** La perception d'une aide sociale élevée pourrait aider à soulager les symptômes de stress post-traumatique chez les personnes blessées par des mines ou des munitions non explosées dans les régions rurales de la République Démocratique Populaire Lao. Les interventions psychosociales devraient être incorporées à l'assistance aux blessés car ils ont des symptômes plus graves et plus durables de stress post-traumatique que les non-blessés.

## Резюме

### Межгрупповое территориальное исследование посттравматических стрессовых расстройств и общественной поддержки в Лаосской Народно-Демократической Республике

**Цель** Провести количественный анализ симптомов посттравматических стрессовых расстройств (ПТСР) у пострадавших и не пострадавших от взрывов мин и неразорвавшихся боеприпасов (НРБ) жителей сельских районов Лаосской Народно-Демократической Республики и установить, зависит ли восприятие общественной поддержки от тяжести симптомов ПТСР.

**Методы** В районе Сепоне провинции Саваннакет— территории Лаосской Народно-Демократической Республики, подвергшейся наиболее интенсивным бомбардировкам во время войны во Вьетнаме, — был проведен опрос местных жителей, в котором участвовали 190 человек, подорвавшихся на минах или неразорвавшихся боеприпасах, и 380 человек, не получивших физических травм и подобранных с учетом сопоставимости пола, возраста и места жительства. Пользуясь Гарвардским опросным листом для оценки травм и анкетой исследования медицинских результатов в части мер социальной поддержки, квалифицированные медработники проводили личные интервью и оценивали симптомы ПТСР и восприятие

общественной поддержки. Для изучения связи общественной поддержки с другими факторами и с ПТСР применялись методы множественной линейной регрессии.

**Результаты** У пострадавших симптомы ПТСР проявлялись чаще (10%), чем у не пострадавших (4%), однако восприятие общественной поддержки в обеих группах было примерно одинаковым. Более высокий уровень восприятия общественной поддержки наблюдался у лиц с более легкими симптомами ПТСР. Более частые и тяжелые проявления ПТСР наблюдались у женщин, лиц пожилого возраста и лиц, получивших формальное образование.

**Вывод** Убежденность в наличии сильной общественной поддержки способна облегчить остроту симптомов ПТСР у жителей сельских районов Лаосской Народно-Демократической Республики, подорвавшихся на минах и НРБ. В программу помощи пострадавшим необходимо включать меры психосоциального характера, поскольку у них симптомы ПТСР протекают тяжелее и дольше, чем у не пострадавших.

## Resumen

### Un estudio transversal de base comunitaria sobre el trastorno de estrés postraumático y el apoyo social recibido en la República Democrática Popular Lao

**Objetivo** Calcular los síntomas del trastorno de estrés postraumático en personas heridas y no heridas por minas antipersona o artefactos sin detonar (UXO) en las zonas rurales de la República Democrática Popular Lao y determinar si la percepción del apoyo social estuvo asociada con la gravedad de los síntomas del TEPT.

**Métodos** Se llevó a cabo una encuesta comunitaria entre 190 heridos por minas antipersona o UXO y 380 personas no heridas emparejadas por edad, sexo y vecindario del distrito de Sepone en la provincia de Savannakhet, la zona de la República Democrática Popular Lao que sufrió el bombardeo más intenso durante la Guerra de Viet Nam. Por medio del cuestionario para evaluar el estrés traumático de Harvard y la encuesta Medical Outcomes Study Social Support Survey, un equipo de personal sanitario formado realizó entrevistas presenciales para evaluar los síntomas del TEPT y el nivel de apoyo social percibido. Se realizó una regresión lineal múltiple para examinar la asociación entre el apoyo social y otros factores con el TEPT.

**Resultados** La prevalencia del TEPT fue más alta entre los heridos (10%) que entre las personas que no sufrieron heridas (4%), sin embargo, el nivel de apoyo social percibido no varió significativamente entre ambos grupos. Un mayor apoyo social percibido estuvo asociado con unos síntomas menos graves del TEPT. Las mujeres y las personas mayores o con una buena educación se vieron afectadas con mayor frecuencia y gravedad por el TEPT.

**Conclusión** La percepción de un apoyo social fuerte podría ayudar a aliviar los síntomas del TEPT entre los heridos por minas antipersona o UXO en las zonas rurales de la República Democrática Popular Lao. Deberían integrarse intervenciones psicosociales como asistencia a los heridos, ya que sus síntomas de TEPT se manifiestan con más gravedad y duración que los de las personas que no han sufrido heridas.

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