Study of ERW Accidents in Quang Tri Province, Vietnam

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Study of ERW Accidents in Quang Tri Province, Vietnam

The purpose of the study discussed in this article was to determine statistical findings, as well as the knowledge, attitude, practices and beliefs of the affected population, regarding the number of explosive-remnants-of-war victims in Quang Tri province, Vietnam, from the end of the American-Vietnam War in 1975 through 2010.

Research Methodology of ERW-affected Victims

A cross-section of the targeted population using descriptive research was conducted among ERW victims in nine districts (including one town) of Quang Tri province. The goal of our “Knowledge, Attitudes, Practices and Beliefs” survey was to gain information about the knowledge, attitude, practices and beliefs of these victims and their family members to determine if they comprehend the means to avoid and prevent accidents caused by ERW. The reference population for the study was the human population of Vietnam. The study sample was selected from families in Quang Tri province that were exposed to ERW accidents from 1975 until the end of 2010.

The study was carried out as a household survey with a cross-section design. The identification of landmine/unexploded ordnance victims was done through a reduction process. A cross-section of the targeted population using descriptive research was conducted among ERW victims in nine districts (including one town) of Quang Tri province. The goal of our “Knowledge, Attitudes, Practices and Beliefs” survey was to gain information about the knowledge, attitude, practices and beliefs of these victims and their family members to determine if they comprehend the means to avoid and prevent accidents caused by ERW. The reference population for the study was the human population of Vietnam. The study sample was selected from families in Quang Tri province that were exposed to ERW accidents from 1975 until the end of 2010.

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Methodology in KAPB Survey

In 2010, the Vietnamese nongovernmental organization Project RENEW, with the provincial Department of Health in Quang Tri, conducted a cross-sectional epidemiological KAPB study in order to describe the incidence and risk factors in ERW accidents in the province. The required sample size for the KAPB study was calculated by the following formula where n = sample size, α = significance level at 0.05, Z = 1.96, d = expected preciseness at 0.014 and P = 0.5. This gives a sample size of 4,900 study units. With the provision of an additional 5 percent, at least a total of 5,100 subjects were required for the study.

The research subjects were then selected among the verified casualty population by purposive sampling in all 10 districts of Quang Tri province using the method of accumulating population, iterated addition and division into 30 random groups. All research subjects were family members who were at least seven years old and could answer the contents of a predefined questionnaire. In each district, the method of selecting the probability sample relevant to the population at random was used. Each random group had at least 170 research subjects (5,100 divided by 30 equaled 170 for each random group). This formula can be used for calculating sample size: n=A2(1-a/2) P(1-P)/d2.

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The investigators were all university graduates who were experienced medical staff. The KAPB data was collected by experienced medical staff. The KAPB data was collected by experienced medical staff.
Confident Interval Analysis software, in addition to 7,075 cumulative ERW questionnaire provided sufficient data, interviewee who refused to answer the questionnaire was excluded. As 5,100 of investigators using the questionnaire was trained by the research committee and local guides and interpreters. To ensure that occurred during the study period. In 2000–10, Quang Tri province began cooperating with international NGOs in neutralizing ERW, and as a result, the average number of annual victims has fallen to 3,424, a reduction of 87 percent in comparison with the average figure for the 1975–2010 period. When we review the data, the geographical skew is confirmed when we look at ethnicity. For instance, most ethnic minorities (Vua Kinh and Paco) live in mountainous areas, especially in Huong Hoa and Dukrong districts, which were sites of fierce battles, military bases and heavy U.S. bombing of the Ho Chi Minh Trail. While ethnic minority groups comprise only 7.9 percent of the province total, this sub-sample accounts for 16.5 percent of all ERW casualties that occurred during the study period. The victims belonged to all age groups, but the vast majority were children, teenagers and middle-aged adults. Victims under 36 years of age constituted 80 percent of total casualty numbers, and those younger than 20 years of age made up 46 percent of the total. Gender was also skewed, as male victims comprised 83 percent of victims, despite the fact that the study population was quite balanced in terms of gender (50.4 percent female, 49.6 percent male). The suspected reason is that accidents are mainly related to outdoor income-generating activities such as farming (38 percent), collecting scrap metal (11.4 percent), herding cattle (8.3 percent) and tapping with ERW (6.3 percent). The problem mainly affects the poor groups of the population. Out of all affected households, 72 percent earned less than US$130 per year as compared to the average per capita income in Quang Tri province of approximately $330 per year (2005 estimate).7 The authors found that people with less income take greater risks to earn more and often go into contaminated areas even if they know ERW are present. More than half the informants said they encountered ERW at least once a year. One in every nine participants said they encountered ERW monthly, one in every 30 encountered ERW weekly and one in every 37 people (4 percent) paid ERW daily. They reported that 92.7 percent of incident sites were not marked with an ERW warning sign.

Conclusion

The study illustrates that 1 percent of the population suffers from ERW accidents involving unexploded cluster munitions. As late as 2004, Quang Tri province alone reported higher casualty numbers than country counts from most other mine- and UXO-contaminated countries. Mine and UXO injuries are severe and have higher mortality rates than other types of trauma. The problem mainly affects low-income households in remote rural areas. Efforts to neutralize the effect of ERW in Quang Tri province include risk education, victim assistance and ERW clearance. The capacity of these projects depends on available funding, however, we are appealing funding resources, so that we may establish a mine-action coordination entity in the province to continue the aforementioned activities. We recommend that ERW-risk education programs take into account the epidemiological findings when designing future campaigns in order to target high-risk areas and activities. See endnotes page 82.

Endnotes

5. Phung Tran Kim obtained his M.D. from Hanoi Medicine University, and his Ph.D. in epidemiology from National Epidemiology and Hygiene Institution. Working as a part-time teacher at Hanoi University of Medicine, he is Senior Advisor for Project RENEW.

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