LANDMINES, EXPLOSIVE REMNANTS OF WAR AND PUBLIC HEALTH

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CONTENT

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• The Impact of Landmines and ERW
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WHAT IS PUBLIC HEALTH?

Public health refers to all organised measures to prevent disease and injury, promote health and prolong life among the population as whole.
The importance of public health

Our health is determined by our genetics, lifestyle, the health care we receive and our wider economic, physical and social environment. Although estimates vary, the wider environment has the largest impact.

  - Health care (43%)
  - Other factors (57%)

- **McGiniss et al (2002)**
  - Health care (15%)
  - Health behaviour patterns (40%)
  - Social circumstances and environmental exposure (45%)

- **Canadian Institute of Advanced Research (2012)**
  - Health care (25%)
  - Environmental (15%)
  - Socio-economic (50%)
The effect of explosive remnants of war on global public health: a systematic mixed-studies review using narrative synthesis

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Summary
Background Explosive remnants of war (ERW)—landmines, unexploded ordnance (UXO), and abandoned exploitive ordnance (AXO)—have been recognised as a threat to health since the 1990s. We aimed to study the effect of ERW on global public health.

Methods In this systematic mixed-studies review, we searched the Web of Science, Scopus, PubMed, and ProQuest databases, and hand searched relevant websites, for articles published between Jan 1, 1999, and Aug 31, 2005. We used keywords and Medical Subject Headings related to ERW, landmines, UXO, and AXO to locate original peer-reviewed quantitative, qualitative, or mixed-methods studies in English of the direct or psychological effects of ERW on direct victims of the explosive device or reverberating social and economic effects on direct victims and indirect victims (their families and the wider at-risk community). We excluded studies if more than 25% of participants were military, if they were of deminers, or if they were from high-income countries, or if they were of chemical weapons. We identified no peer-reviewed studies of AXO effects, so we extended the search to include grey literature. We critically appraised study quality using a mixed-methods appraisal tool. We used a narrative synthesis approach to categorise and synthesise the literature. We extracted quantitative data and calculated means and proportions.

Findings The initial search identified 10226 studies, leaving 8378 (82%) after removal of duplicates, of which we reviewed 34 (4%) were quantitative descriptive studies, 29 (3%) were quantitative non-randomised studies, four (7%) were mixed-methods studies, and four (7%) were grey literature. The direct psychological effects of landmines or UXO appear high. We identified comorbidity of anxiety and depression in landmine or UXO victims in four studies, more women presented with post-traumatic stress disorder than did men in two studies, and landmine or UXO victims reported a greater prevalence of post-traumatic stress disorder, anxiety, or depression than did control groups in two studies. Overall injury and mortality rates caused by landmines or UXO decreased over time across five studies and increased in one. More men were injured or killed by landmines or UXO than women (60–65% of women), the mean ages of casualties ranged from 13.1 years to 51.1 years, and victims were likely to be doing an activity of everyday necessity at the time of injury. The proportion of casualties of landmines or UXO younger than 18 years ranged from 22% to 53% across twelve studies. Landmine or UXO victims who had one or more limbs amputated ranged from 11.3% to 52.3%. Landmines and UXO had a negative impact on internally displaced populations and returning refugees, physical security, economic productivity, child health and educational attainment, food security, and agriculture in studies from seven countries. We could not establish the proportion of casualties caused by AXO from unexploded ordnances at munitions sites, although the grey literature suggests that AXO is a substantial problem.

Interpretation Individually, these landmine and UXO results are not new and substantiate findings from existing research. Taken together, however, these findings provide a picture of the effect of landmines and UXO that stretches far beyond injury and mortality prevalence, making landmine and UXO clearance a more favourable option for landmine. AXO effects are understudied and warrant further research.

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Introduction The effects of explosive remnants of war (ERW), defined here as landmines (victim-activated explosive traps that target people and vehicles), unexploded ordnance (UXO)—explorers that have been fired, dropped, launched, or projected during a conflict and yet remain unexploded—and abandoned exploitive ordnance (AXO) are not always used or have been left behind and dumped by a party in an armed conflict and are no longer under the control of the party that left them behind and dumped them, are disproportionately borne by citizens of low-income and middle-income countries (LMICs). ERW pose a threat to people’s health and human rights in more than 40 LMICs. Annual casualty numbers are...
MAIN FINDINGS

- 70% of studies examined the physical effects of landmines/UXO on victims.
- Casualties were likely to be men in the economically productive age range.
- 22-55% of casualties were children.
- The psychological effects on victims appear high.
- Wide ranging negative socio-economic impacts were reported.
- No academic studies on the effects of AXO.
HOW DOES PUBLIC HEALTH RELATE TO MINE ACTION?

Landmines and ERW cause injury and death, they diminish the health and wellbeing of affected populations.

Mine action interventions are public health interventions.
MINE ACTION INTERVENTIONS

- Interventions that are evidenced based and context specific.
- Appropriate for the target population.
- Impactful and cost effective.
INJURY SURVEILLANCE

The ongoing and systematic collection, analysis, interpretation and dissemination of health information.

It can tell us about:
• the size and characteristics of a health problem
• the populations at risk
• the risk factors
• the trends.
INJURY SURVEILLANCE AND MINE ACTION

Surveillance data was analysed in studies from Afghanistan, Bosnia, Cambodian, Chechnya, Mozambique and Nepal.

Data was collected from hospitals and clinics, from media reports, from community networks, and from existing mine action programs.

Information captured on wide range of factors including injury trends over time, who was being injured, location and type of injury, type of ordnance involved in injury, activity at time of injury.
The importance of injury surveillance.

Broadening the scope of understanding beyond the physical effects of landmines/ERW.

Focusing on saving lives and limbs.

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Credit to Colin King for all images