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Libyan armed conflict 2011: Mortality, injury and population displacement



Le conflit armé Libyen de 2011: Mortalité, blessures et déplacements de population

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Background: Armed conflicts can negatively affect health services and cause injuries and death. The recent Arab uprising has been associated with considerable damage to infrastructure and loss of human lives. The aim of this study was to determine mortality, injuries and population displacement that occurred during the recent Libyan armed conflict.

Methods: A systematic cross-sectional field survey and non-structured search was carried out over fourteen provinces in six Libyan regions, representing the primary sites of the armed conflict between February 2011 and February 2012. Thirty-five percent of the total area of Libya and 62.4% of the Libyan population were involved in the study. The mortality and injury rates were determined and the number of displaced people was calculated during the conflict period.

Results: A total of 21,490 (0.5%) persons were killed, 19,700 (0.47%) injured and 435,000 (10.33%) displaced. The overall mortality rate was found to be 5.1 per 1000 per year (95% CI 4.1–7.4) and injury rate was found to be 4.7 per 1000 per year (95% CI 3.9–7.2) but varied by both region and time, reaching peak rates by July–August 2011.

Conclusion: The Libyan armed conflict resulted in great human loss and social damage mirrored by high rates of mortality, injury and human displacement. Such parameters peaked as the conflict escalated and differed according to the Libyan regions and provinces involved. National and international efforts should be combined to overcome the consequences of these conflicts.

Présentation: Les conflits armés peuvent affecter négativement la santé et provoquer des blessures et des décès. Le récent soulèvement arabe a été associé à des dommages considérables aux infrastructures et à la perte de vies humaines. L'objectif de cette étude était de déterminer le taux de mortalité, de blessures et les déplacements de population pendant le récent conflit armé en Libye.

Méthodes: Une étude de terrain transversale et systématique et une recherche non structurée ont été réalisées afin de couvrir six régions libyennes incluant 14 provinces, qui étaient les principaux théâtres du conflit armé entre février 2011 et février 2012. Cette étude concernait trente-cinq pour cent de la surface totale de la Libye et 62,4 % de la population libyenne. Les taux de mortalité et de blessures et le nombre de personnes déplacées ont été calculés sur la période du conflit.

Résultats: Au total, 21,490 (0,5 %) personnes ont été tuées, 19,700 (0,47 %) personnes ont été blessées et 435,000 (10,33 %) personnes ont été déplacées. Le taux de mortalité global a été estimé à 5,1 pour 1 000 par an (IC de 95 % ; 4,1 – 7,4) et le taux de blessures global a été estimé à 4,7 pour 1 000 par an (IC de 95 % ; 3,9 – 7,2); ces taux variaient d'une région à l'autre. Ils ont varié périodiquement au cours du conflit et ont atteint un sommet en juillet-août 2011, la situation s'étant aggravée pour connaître ensuite un retour au calme vers la fin du conflit.

Conclusion: Le conflit armé libyen a été associé à des pertes humaines considérables ainsi qu'à des dommages sur le plan social, que reflètent les forts taux de mortalité, de blessures et les importants déplacements humains. Ces paramètres ont atteint un sommet quand la situation s'est aggravée, et ont varié selon les régions et provinces libyennes concernées. Il convient de combiner efforts nationaux et internationaux afin de surmonter les conséquences des conflits de ce type.

African relevance

- The study highlights the mortality, injury and population displacement as a result of the armed conflict in Libya.

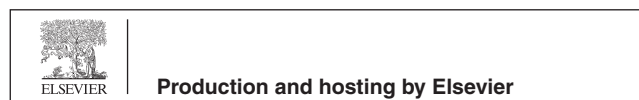
- The rates of such war complications varied extensively from one region to another in Libya and during the conflict period.

Introduction

Armed conflict in any country results in devastating and long-lasting consequences. Low to middle income countries tend to be both more susceptible to armed conflict as well as the least equipped to deal with post-conflict devastation including death; disability and injury; destruction of property; disruption

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of economic activities and the diversion of resources from health care.^{1,2} The direct and immediate casualties of war represent the tip of the iceberg compared to their long-term consequences, which are often poorly documented and inadequately reported.³⁻⁷ In recent years there have been uprisings in several Arab states, including Tunisia, Egypt, Yemen, Libya and Syria. In Tunisia, Egypt and Yemen these took the form of mainly civil protests and clashes between civilians and police forces, though in Libya and Syria it escalated into armed combat.^{8,9}

Libya is a North African country with a surface area of 1,775,500 km², making it the second largest on the continent. According to the World Bank, its population is 6,154,623 and the gross national income per capita of its oil-based economy in 2009 was US\$12,930 (<http://data.worldbank.org/country/libya>).^{10,11} Consequently, it boasts the highest literacy rate and educational enrolment in North Africa and Arab countries.^{12,13} In February 2011, after more than four decades under the rule of Colonel Gaddafi and in the wake of the uprisings in adjacent Tunisia and Egypt, Libya experienced a major armed uprising.¹⁴ International intervention in the form of NATO airpower enabled the fighting groups to topple the Libyan socialist regime. Moreover, the war and its repercussions resulted in internal and external population displacement, on top of great human and economic cost.¹⁵⁻¹⁷ There are no reliable data on the numbers involved and the objectives of this study were to estimate the number of deaths and injuries in the different regions of Libya and to examine population displacement in the Libyan community.

Methods

This epidemiological community-based study was guided by previously published studies and guidelines.^{15,18,19} The recruitment and data collection were conducted in the 14 provinces of the six regions affected by the conflict. The regions included in the study were: Eastward Coastal Region (ECR), Middle Coastal Region (MCR), Westward Coastal Region (WCR), West Mountain Region (WMR), Middle Mountain Region (MMR), and Southward Sahara Region (SSR). The geographical location, provinces and total population of each region is illustrated in Table 1. The study covered an area of 621,425 km² with approximately 4,211,700 inhabitants. Regions that were not directly involved in the fighting were not included in the study.

Face to face interviews were carried out with at least one member of each affected family listed in the registry of the Ministry of Housing and Planning. The interviews were carried out by medical doctors and trained social workers under the supervision of a senior clinical epidemiologist. The data were used to confirm the information regarding the affected people within the families, for whom documentation was otherwise missing. Written informed consent was obtained from all the participants before the interview. Data on changes and consequences in each region as a result of fighting were collected as well, including information on direct damages, demographic changes and human suffering.

The questionnaire used to collect demographic and epidemiologic data was anonymous, and sought information on all adult citizens killed, injured or displaced between February 2011 and February 2012. The data were obtained

Table 1 Distribution of deaths, injury and human displacement among the regions involved in the Libya conflict, 2011.

Region	Population		Deaths		Injured		Displaced	
	n	% total deaths	n	% total injured	n	% total displaced		
Eastward Coast Region [ECR]	886,800	2.6	2300	7800	70,000	78.9	16.1	
Middle Coast Region [MCR]	715,200	17.5	12,500	4900	184,000	257.3	42.3	
Westward Coast Region [WCR]	1,709,400	1.8	3100	1900	29,500	17.3	6.8	
West Mountain Region [WMR]	418,200	1.8	775	1600	49,000	117.2	11.3	
Middle Mountain Region [MMR]	350,100	7.1	2500	2800	98,000	279.9	22.5	
Southward Sahara Region [SSR]	132,000	2.6	334	700	4500	3.8	1.0	
Total	4,211,700	5.1	21,490 (0.5%)	19,701 (0.47%)	435,000 (10.33%)	8.3	100	

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