

should be considered in international policies concerned with arms availability and transfer.

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Incidence of weapon injuries not related to interfactional combat in Afghanistan in 1996: prospective cohort study

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Abstract

Objective To examine the descriptive epidemiology of weapon injuries not directly attributable to combat during armed conflict.

Design Prospective cohort study.

Setting Nangarhar region of Afghanistan, which experienced effective peace, intense fighting, and then peace over six months in 1996.

Subjects 608 people admitted to Jalalabad hospital because of weapon injuries.

Main outcome measures Estimated incidence of injuries from combat or otherwise (non-combat injury) before, during, and after the fall of Kabul.

Results Incidence of non-combat injury was initially 65 per 100 000. During the intense military campaign for Kabul the incidence declined dramatically, and then differentially increased dependent on injury subcategory—that is, whether injuries were accidental or intentional and whether they were inflicted by firearms or fragmenting munitions. Non-combat injuries accounted for 51% of weapon injuries observed over the study period. Civilians were more likely to have non-combat injuries than combat injuries.

Conclusions Weapon injuries that are not attributable to combat are common. Social changes accompanying conflict and widespread availability of weapons may be predictive of use of weapons that persists independently of conflict.

Introduction

Television images of children clutching kalashnikov rifles underscore the fact that in many regions weapons designed for use by trained armed forces are no longer in military hands.^{1,2} This has been argued to contribute to social violence more generally.^{3,4}

In 1993 the International Committee of the Red Cross began supporting the surgical activities of Jalalabad hospital, 120 kilometres east of Kabul in the Nangarhar region of Afghanistan. Under control of a single authority, this region had not experienced interfactional combat since 1992. On 10 September 1996 the Taliban faction overran Jalalabad without bloodshed and launched its final offensive on Kabul, which fell on 26 September. We examined weapon injuries over six months, before, during, and after the battle for Kabul.

Patients and methods

From 1 June 1996 to 30 November 1996 all people admitted to Jalalabad hospital with weapon injuries were given a structured interview eliciting demographic information and circumstances surrounding injury. Since Jalalabad hospital was the sole surgical facility in the region, we believe our study includes almost all people injured by weapons in Nangarhar who survived to reach hospital.

The category civilian included all women and girls, boys (aged under 16), and men aged 50 and older. Mine injuries were not included because of the passive way in which they inflict injury. Injuries were classed as combat injuries if they had been sustained during interfactional combat. All other injuries were classed as non-combat injuries and further categorised into accidents, violence, or tribal fighting. Classification of injury was assigned by one of us (MM) on the rare occasions that it was ambiguous.

We calculated the incidence of weapon injury for the whole study and before, during, and after the battle for Kabul. These rates were calculated for an estimated regional population at the mid-point of the study period on the basis of data provided by the United Nations High Commissioner for Refugees.

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Table 1 Descriptive data for patients with weapon injuries. Values are numbers (percentages) of patients unless stated otherwise

	All injuries	Combat injuries	Non-combat injuries
Adults (≥16)	516 (85)	256 (86)	260 (84)
Children (0-15)	92 (15)	41 (14)	51 (16)
Civilians*	198 (33)	75 (25)	123 (40)
Male	547 (90)	243 (95)	221 (85)
Median age (years)	25	26	25
Admissions:			
All weapons	608	297	311
Firearms	280 (46)	77 (26)	203 (65)
Fragmenting munitions†	309 (51)	216 (73)	93 (30)
Other‡	19 (3)	4 (1)	15 (5)
In-hospital mortality (%):			
All weapons	2	2	1.9
Firearms	2.9	2.6	3
Fragmenting munitions†	1.3	1.9	0
Other‡	0	0	0

*Women and girls, boys (under 16), and men ≥50.

†Includes bombs, shells, and grenades.

‡Primarily knives or blunt weapons.

Table 2 Numbers of admissions and annual incidences of combat and non-combat injuries by time period

Time period	No of admissions		Annual incidence per 100 000 population	
	Combat injuries	Non-combat injuries	Combat injuries	Non-combat injuries
Study (1 Jun-30 Nov 1996)	297	311	39	41
Fall of Kabul:				
Before (1 Jun-9 Sep 1996)	0	269	0	65
During (10 Sep-26 Sep 1996)	235	3	335	4
After (27 Sep-30 Nov 1996)	62	39	23	15

Results

Table 1 shows the characteristics of the 608 patients comprising our study population. Another 149 people with mine injuries were not included in the analysis. Civilians were more likely to sustain non-combat than combat injuries (table 1, $P < 0.001$). Non-combat injuries were inflicted principally with firearms, whereas combat injuries were inflicted principally with fragmenting munitions (bombs, shells, or grenades). In-hospital mortality was comparable to previous experience.^{3 5 6}

Table 2 shows the numbers of admissions and the incidence of combat and non-combat injuries during the study and before, during, and after the battle for Kabul. The incidence of non-combat injury was high over the six months (41 per 100 000) but declined sharply during the battle for Kabul, rising subsequently (table 2).

Table 3 gives a breakdown of the incidence of non-combat injury by type and time period. Apart from a

car bomb explosion in June and a tribal clash in August, almost all non-combat injuries were caused by firearms. The increased incidence of non-combat injury after the fall of Kabul was principally due to accidental injuries from firearms.

Discussion

We found a high incidence of weapon injury in a heavily militarised setting without interfactional combat.

Limitations of study

Four limitations of this study deserve comment.

Firstly, we underascertained injuries because we included only those who reached hospital. For every American killed in the field in Vietnam between 1.5 and 3 people were wounded and reached care⁷; in Vietnam, evacuation time was probably about 1 hour for American casualties. Underascertainment was probably substantial in our study because access times were considerably longer.

Secondly, we inferred that the availability of weapons was high without measuring it. However, the extent of arms transfers into Afghanistan has been reported to be immense.⁸

Thirdly, injuries may have been misclassified, although this probably occurred only rarely. Classification criteria were unambiguous, and few cases required designation of category.

Finally, our population estimate may be inaccurate, but it was calculated from the best available data and is comparable to the estimate provided by regional authorities.

Non-combat injuries from firearms

Before the Taliban takeover of Jalalabad the incidence of non-combat injuries from firearms was 38 per 100 000 population per year. This is about the annual incidence of firearm injuries in the United States, reported to be 39 per 100 000.⁹

The United States is unique in terms of violence caused by firearms, with rates of intentional death from firearms that far exceed those in other countries.¹⁰ Our observed incidence is probably lower than the true incidence. In addition, handguns cause many of the injuries from firearms in the United States, but AK-47 assault rifles caused most of the firearm injuries in our study. The increased kinetic energy of individual projectiles and higher rates of fire achieved by AK-47s imply that people in our study would be likely to have more severe injuries.

Impulse and ready access to firearms are thought to play an important part in firearm injuries,^{11 12} a combination which would probably have been potentiated

Table 3 Incidences of non-combat injury per 100 000 population by time period and type of weapon

Time period	Firearms		Fragmenting munitions*		Tribal fighting		
	Accidental	Intentional	Accidental	Intentional	Firearms	Fragmenting munitions*	Other
Study (1 Jun-30 Nov 1996)	18	8	1	4	1	8	2
Fall of Kabul:							
Before (1 Jun-9 Sep 1996)	24	14	1	7	2	14	3
During (10 Sep-26 Sep 1996)	3	0	0	0	0	0	1
After (27 Sep-30 Nov 1996)	12	2	0	0	0	0	1

*Includes bombs, shells, and grenades.

by the lack of a functioning judiciary in Jalalabad. Most intentional injuries arose during family disputes, followed by disputes over land and people breaking up altercations. Most accidental injuries were self inflicted, followed by stray bullets and of unknown origin. Women and children primarily sustained accidental injuries while an assault rifle was being cleaned in the home.

A remark should also be made about the tribal clash that occurred during our study. While probably always a feature of Afghan rural life, tribal fighting tended to be small scale, with individual assaults avenged on a case by case basis. We believe that the influx of weaponry from the larger intrastate conflict has profoundly changed the way in which these disputes are played out. In the tribal fighting during our study, 90% of those reaching hospital were injured by fragmenting munitions, and over a quarter of these were women or children.

Conclusions

The enduring consequences of widespread availability of weapons have been less emphasised than those of landmines. Nevertheless, recent initiatives such as programmes to buy back weapons and reintegrate combatants into peacetime occupations have addressed the issue.^{13 14} Such programmes face serious challenges. Programmes that buy back weapons can fuel demand for weapons, and providing a social and economic environment where people feel secure to relinquish weapons is easily obstructed by those with opposing vested interests.^{15 16}

From a public health perspective, this suggests efforts should include, if not favour, primary prevention. Widespread availability of military weapons and accompanying social changes are likely to facilitate social violence that arises as a side effect of and subsides independently from conflict. Doctors and others concerned with the health of populations should bring this to the attention of policy makers and others who are concerned by the arms trade and its implications.

Contributors: MM initiated and coordinated the collection of data, discussed core ideas and interpretation of the data, and participated in writing the paper. DRM conducted the analysis and interpretation of the data, discussed core ideas, and wrote the paper. SR participated in the study design, data collection and analysis, and discussed core ideas. JLG-F participated in the design, analysis, and interpretation of the data and contributed to the paper. DRM is guarantor of the paper.

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Key messages

- A region in Afghanistan experienced peace, intense combat, and then peace in 1996
- During peace the incidence of injury from weapons was high, the incidence of injury from firearms being similar to that in the United States
- Over half of all weapon injuries were not attributable to interfactional combat
- Weapon availability and social breakdown accompanying conflict may be important factors in the occurrence of weapon injuries that persist independently of conflict

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