

# Gender Differences in Civilian Injury in Baghdad from 2003 to 2014: Results of a Randomized Household Cluster Survey

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# Gender Differences in Civilian Injury in Baghdad from 2003 to 2014: Results of a Randomized Household Cluster Survey

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## Intro/Background

Accurate estimates of the injury burden among civilians during conflict are lacking, particularly among vulnerable sub-populations. We aimed to examine gender differences in the death, disability and household consequences of injury in post-invasion Baghdad to inform prevention initiatives, health policy, and relief planning.

## Methods

A two-stage, cluster randomized, community-based household survey was performed in May of 2014 to determine the civilian burden of injury from 2003 to 2014 in Baghdad. In addition to questions about household member death, households were interviewed regarding injury specifics, healthcare required, disability, relatedness to conflict and resultant financial hardship. This sub-analysis focused on injuries among females and gender differences. Al Mustansiriya University and Baghdad Provincial Council approved the study design and details. Secondary analysis of the anonymous database was approved through Johns Hopkins Bloomberg School of Public Health and the University of Washington institutional review boards.

## Results Gathered

900 households, totaling 5,148 individuals, were interviewed [Table 1]. A total of 553 injuries were reported, 162 of which were female (29% of injuries). The mean age of injury was higher among females (34.07 years) compared to males (27.34 years) ( $p < .001$ ) [Figure 1]. More females ( $n=104; 64%$ ) were injured in the home than were males ( $n=82; 21%$ ) ( $p < .001$ ). Fewer female injuries reportedly resulted in death (6.8% (11) of women's injuries vs 19.7% (77) of men's;  $p < .001$ ). Of the injured individuals, women ( $n=101; 62.7%$ ) were more likely to survive injuries but with a larger occurrence of reduced function, compared to men ( $n=192; 49.1%$ ) ( $p = .004$ ). Of the intentional injuries, women were most often injured by shell fragments ( $n=14; 41.2%$ ) as opposed to men who most frequently were injured by gunshots ( $n=76; 40.6%$ ).

## Conclusions

Injuries were very common among women in Baghdad between 2003-2014. Further, the communities and families of injury victims suffered considerably due to lost-wages, often resulting in household food insecurity. Ongoing conflict may alter usual injury patterns and undermine efforts to reduce morbidity and mortality caused by injuries.

## Results

**Table 1. Distribution of Clusters for Baghdad Survey**

Administrative Unit	Estimated Population	Number of Clusters
Adhama	280,319	1
Al Adel	563,019	2
Al Shaab	84,7387	4
Amel	311,143	1
Dowra	376,287	2
Ealam	286,712	1
Khadamiyah	633,797	3
Karadah	93,347	0
Karkh	226,694	1
Mansour	588,812	2
Meshtal	349,294	2
New Baghdad	1,068,270	5
Rusafa	171,484	1
Thawra	1,147,014	5
TOTAL	6,943,579	30

Figure 1: Age at Injury Distribution of Females vs. Males

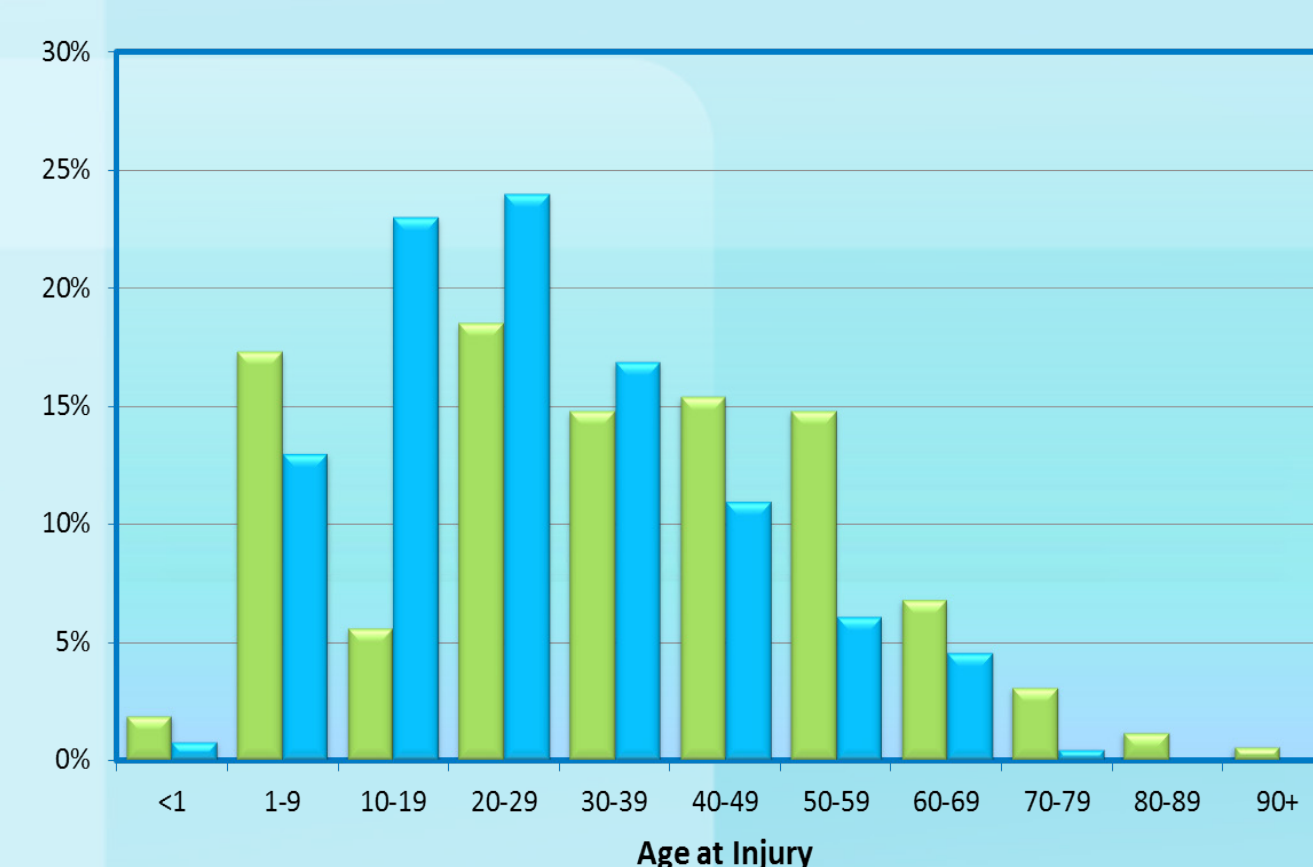
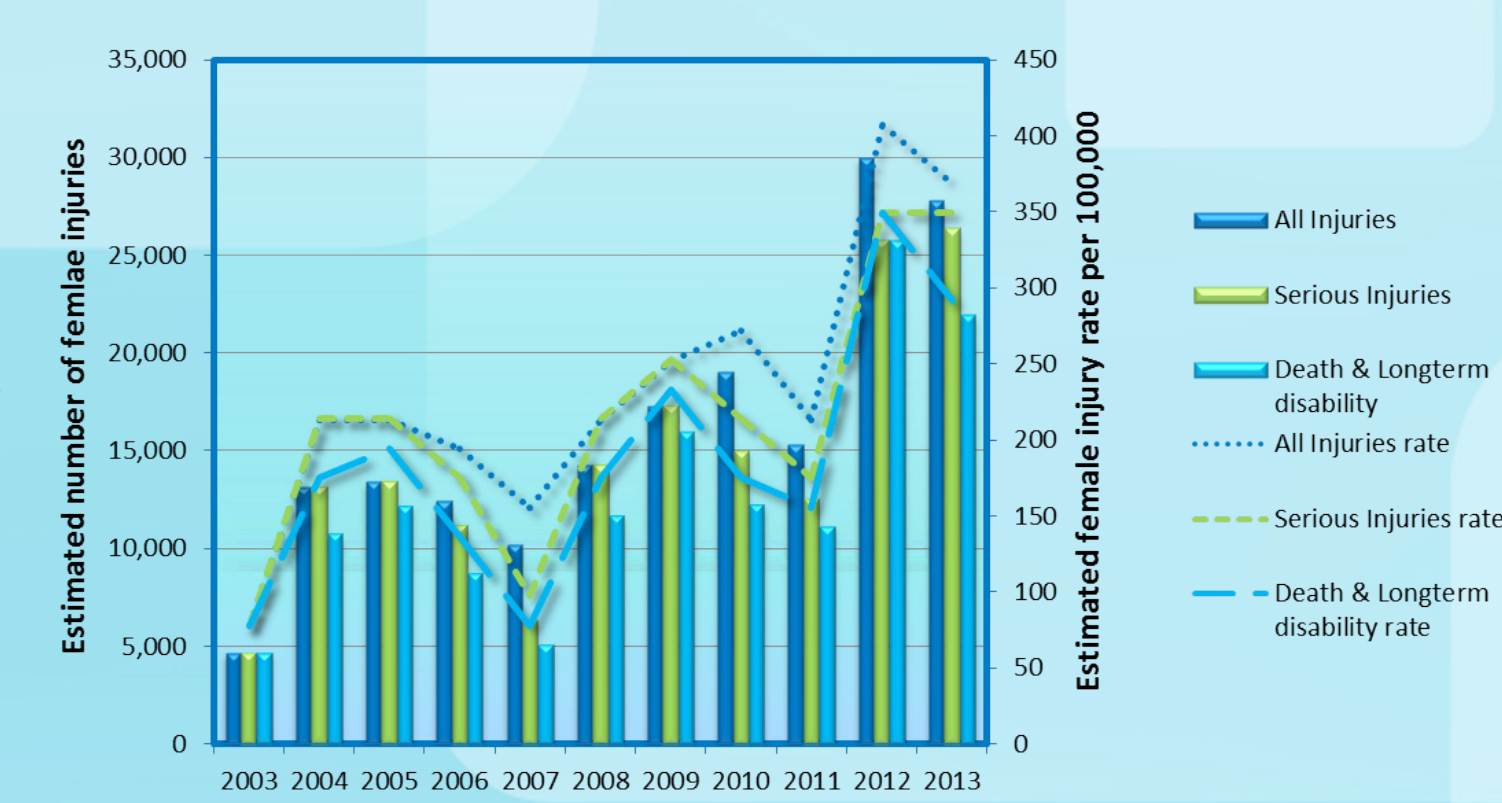


Figure 2: Sensitivity Analysis for Estimated Female Injury and Death Rates



**Table 2. Collected Survey Data**

Injuries (n)	Females		Males		All	
	%	n	%	n	%	n
Injuries (n)	16.2	162	29.1	391	45.3	553
Mean Age	34.07		27.34		29.31	

**Table 2. Collected Survey Data (Cont'd)**

Nature of Injury	Females		Males		All	
	%	n	%	n	%	n
Injuries (n)	16.2	162	29.1	391	45.3	553
Mean Age	34.07		27.34		29.31	

**Table 2. Collected Survey Data (Cont'd)**

Where You Able to Meet Financial Needs...?	Females		Males		All	
	%	n	%	n	%	n
Injuries (n)	16.2	162	29.1	391	45.3	553
Mean Age	34.07		27.34		29.31	

**Table 2. Collected Survey Data (Cont'd)**

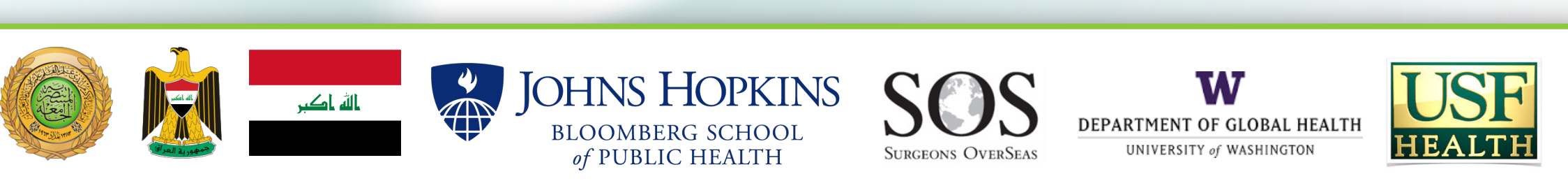
Age Groups	Females		Males		All	
	%	n	%	n	%	n
Injuries (n)	16.2	162	29.1	391	45.3	553
Mean Age	34.07		27.34		29.31	

**Table 2. Collected Survey Data (Cont'd)**

Type of Injury	Females		Males		All	
	%	n	%	n	%	n
Injuries (n)	16.2	162	29.1	391	45.3	553
Mean Age	34.07		27.34		29.31	

**Table 2. Collected Survey Data (Cont'd)**

Disability Affecting Normal Activities?	Females		Males		All	
	%	n	%	n	%	n
Injuries (n)	16.2	162	29.1	391	45.3	553
Mean Age	34.07		27.34		29.31	



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