



**Research Article**

## **A STUDY OF STAB WOUNDS IN EAST LONDON DISTRICT GENERAL HOSPITAL**

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### **ABSTRACT**

Stabbing in East London has increased significantly over the past decade. We have reported 325 stabbings presented to a district general hospital in East London over 18 months period. This is equivalent to 90 stabbings per 100,000 per year. They were mainly males and young (median age 22). We analysed three months period of 18 months and among the victims we found no difference between white or black ethnic origin and most of the stabbing took place in a public place. The knife was the commonest weapon used and the upper limb was the commonest site injured, followed by the lower limb, then the chest. Only one patient had laparotomy, six had chest drains, and six were explored under general anaesthesia. Most of the patients were attacked by unknown assailant, and 33% were attacked by more than one assailant. Most of the incidences occurred over the weekend, between 6 pm and midnight. We also compared our study with similar study done in the same Hospital ten years ago, and we showed increase in the incidence from 44 per 100,000 to 90 per 100,000 per year. We also looked at the involvement of alcohol, drugs and theft, and we also compared our results with other published results from Homerton, Limerick, Glasgow and Sweden.

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### **INTRODUCTION**

The incidence of stab wounds has been rising generally in UK, however in East London; we recorded the highest incidence compared to other published studies. In England and Wales, there were 839 Homicides, 29% of which involved sharp instruments, including knives, blades, and swords. Fire arms on the other hand, constituted only 9%. The murder rate in UK is 15 per million, which is still much lower as compared to the murder rate in US, where it is 55 per million, 70% of which is by fire arms, and only 14% involved knives or cutting instrument. In London alone last year (2006) there were 12,589 knife related crimes, mostly males, ages ranging from 15 to 18. It is illegal for anyone under the age of 16 to buy a knife (defined by the Home Office as any article with a pointed blade) unless it is less than three inches and foldable. Carrying a blade in school is punished by up to four years imprisonment, however, this is rarely implemented. The House of Lords is considering a crime reduction bill that would raise the minimum age to buy a knife from 16 to 18, and to give the teachers the power to physically search students, and mandate jail time for possessing a knife without a cause.

### **METHOD**

All patients presented with stab wound to Newham General Hospital, in East London over a period from October 2004 to May 2006 were included in the audit. Out of this we analysed three month period from Jan 2006 to March 2006, and worked out the distribution of ethnicity, the place of stabbing, the weapon used, the different anatomical part of the body involved, the outcome of the incidence, the types of procedures done, staff involved in managing the patients, the assailants and their relation to the victim. We also looked at the day and time of the week and we compared these results with similar study conducted by our accident and emergency department ten years ago.

Patients list was generated from the audit department of the hospital, and all patients attacked with a sharp instrument were included. Notes were obtained from the medical records department, if they were admitted, or Accident and Emergency (A&E) department if only seen and discharged from A&E. We were assisted by the audit and the IT department in analysing and setting up a database. We also did a Medline search for major publications of similar audits in the past ten years, and compared it with our study.

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**RESULTS**

From October 2004 till May 2006 a total of 325 patients with stab wounds were seen in the A&E department, out of 131,704 patients presenting to the department at the same time. This constituted 0.03% of all new cases, and 90 per 100,000 per year of all local population. There were 299 males (92%) and 26 (8%) females, 35% were admitted, 51% were discharged and 3 died. The median age was 22 (range 12 to 63).

When we analysed three months, January 2006 till March 2006, in details, we found that there was no significant difference among victims between the black and the white ethnicity (Fig.1). The majority of incidences took place in a public place (Fig. 2), and the knife was the commonest weapon used. The upper limb was the commonest affected anatomical site (38%) followed by the lower limb (30%), Chest (27%), Head and Neck (22%) then the abdomen (11%) and the back (11%). The severity of the injuries was variable, three mortalities were reported, while of those admitted, only one had a laparotomy, the indication was protruding omentum from the wound and six had Chest drain, none required a thoracotomy, and six had their wounds explored under general anaesthesia.

The majority of the assailants were unknown (41%), (fig.5) however, with the emergence of the 'gangster phenomena' 33% of our patients claimed that they were attacked by more than assailant. This phenomenon was not reported by a similar study in the same hospital ten years ago. The majority of the stabbings took place during the weekend (Fig 6), between six p.m and ten pm. 18% of the assaults had alcohol involved, and 18% were mugged. Drugs, on the other hand were involved in only 5%. There was an effective role played by the emergency nurse practitioner, where 16% of the patients were seen and managed, on the other hand 58% of the patients were referred to the surgeons, and only 22% of the patients were seen and managed only by the accident and emergency SHO.

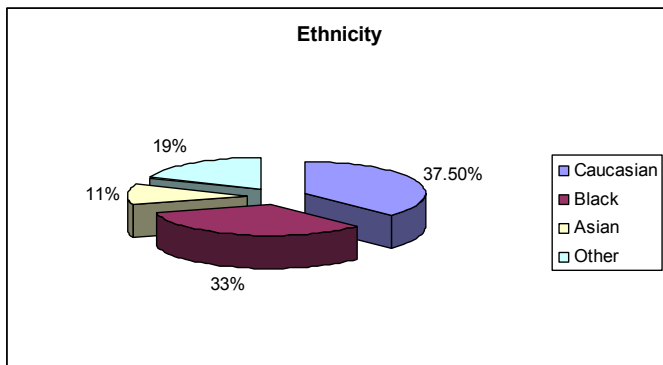


Fig 1 Pie chart showing the distribution of different ethnic groups

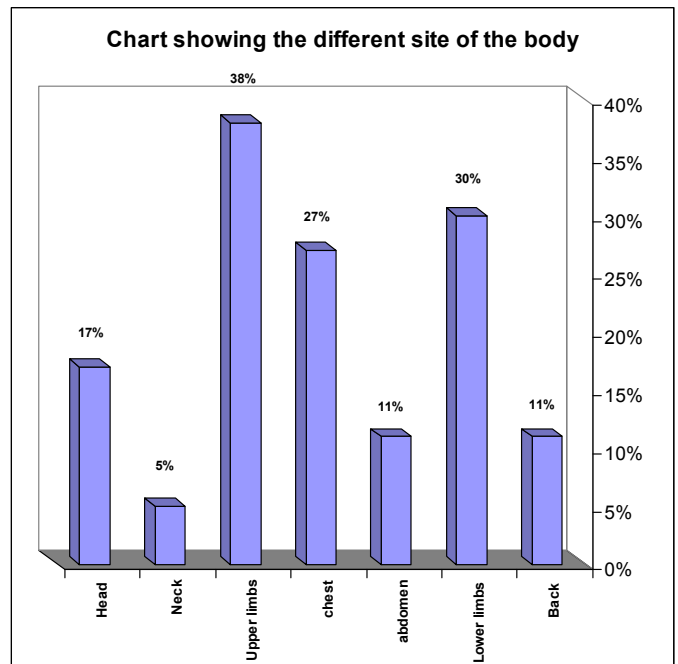


Fig 4 Chart showing the different anatomical sites injured

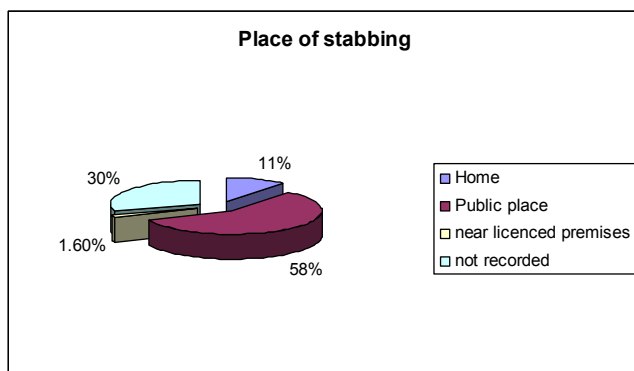


Fig 2 Pie chart showing the place where the stabbing took place

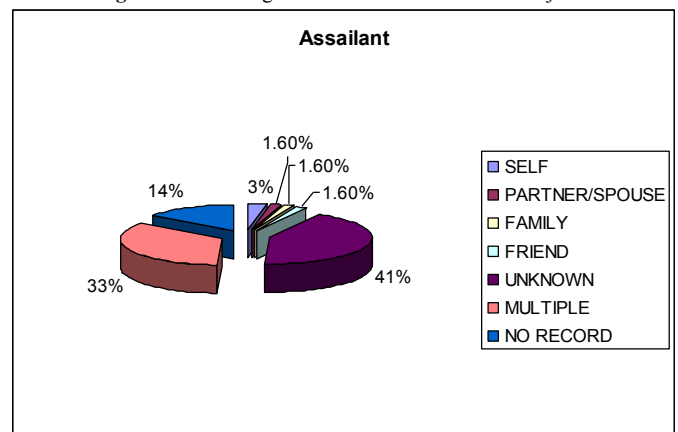


Fig 5 Pie chart showing the distribution of different assailants

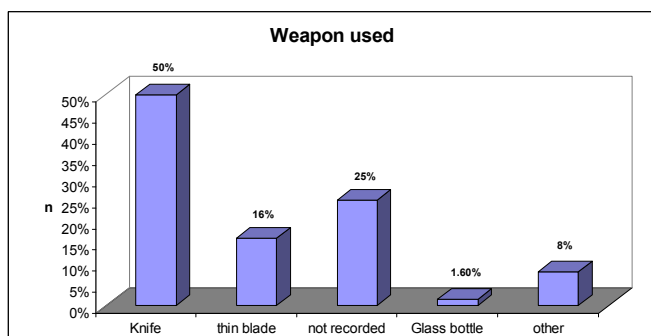


Fig 3 Chart showing the different weapons used

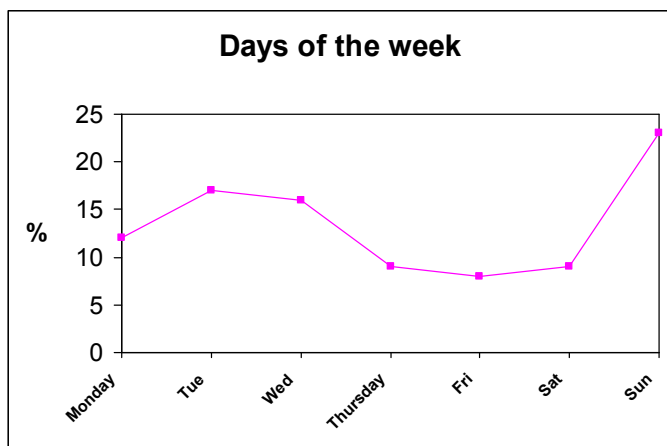


Fig 6 Chart showing the distribution of the stab incidence among the days of the week.

### Comparative studies

		Homerton (1978-1983)	Cardiff (1991)	Limerick (2001)	Glasgow (1978 - 1983)	Sweden (1987-1994)	Newham (2006)
Incidence Per year	Total	16/100,000	14/100,000	33/100,000	10.4/100,000	2.1/100,000	90/100,000
	male	93%	91%	58%		85%	84%
	Female	13%	9%	12%		15%	16%
Alcohol		64%	25%	16%			18%
Weapon most common used	Knife	88%	39%		Most common	Most common	50%
Body sites	Thoracic	34%		16%		29%	19%
	Limbs	25%		39%		15%	49%
	Abdomen	23%	47%	15%		21%	8%
	H&N	17%		36		16	16%

Fig 7 Comparative table showing the different result between Newham Hospital, and the other studies.

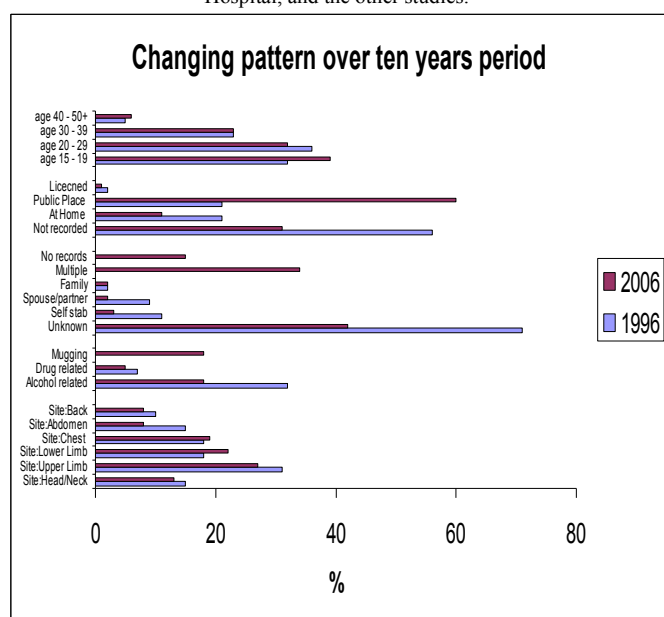


Fig 8 Chart showing the changes in Newham Hospital over the past ten years.

Comparing our result with similar study in the same Hospital ten years earlier, we found an increase in tendency to discharge patients, and to admit less (fig 8), the anatomical site, on the other hand did not change and, it is still the upper limbs which are the commonest sites involved. Alcohol related stabbings has decreased in our Hospital by almost two folds; however, mugging has considerably increased. There were no significant changes in drug related stabbings. There was a marked increase of multiple assailants, which was not recorded ten years ago. The study also showed a one tier shift of age group to the younger side, and it is now commoner at age 15 to 19.

### DISCUSSION

Stabbing was not a common incidence prior to the 60s<sup>1</sup> however despite it is a hot topic in the media now; few clinical studies were published to augment this fact. In our region, Newham University Hospital NHS Trust in East London, we had the highest incidence per capita of 90 per 100,000 per year (fig.7) as compared to Studies from Sweden, which had incidence of 2.1 per 100,000<sup>3</sup>, Limerick, which had incidence of 33 per 100,000<sup>2</sup> and Glasgow which claimed in 1983 incidence of 10.4 per 100,000<sup>4</sup>. Male gender constituted the majority of victims<sup>1,2,4,5,6</sup>, and this is the case with our study, where 92% were males and 8% were females.

Our hospital served a high multi diversity population of 240,000 and it is estimated that the white British population do not constitute more than 30% of the population on this region. The recent influx of East European immigrants to this part of the world has contributed to the approach in similarity of the incidence between Caucasians and Black community (Fig. 1). Compared to USA, England and Wales are still considered safer. In 2006 there were 839 homicides in England, 29% of which involved sharp instruments including knives, blades, and swords. The murder rate in England is 15 per million whereas in the USA was 55 per million, 70% of which involved firearms and only 14% involved knives or cutting instrument.

The management of abdominal wounds has always been controversial, one school favoured exploration of all abdominal wounds<sup>5</sup>, but this has led to high negative laparotomy rate, which in itself is associated with mortality and morbidity<sup>6</sup>. Other school favoured a more selective approach. 25% – 33% of patients with stab wound of the anterior abdominal wall do not have penetration of the peritoneal cavity<sup>7</sup>. The main indication for laparotomy were signs of peritoneal irritation, (tenderness, rebound, guarding and rigidity), shock or evisceration of abdominal content, new incidence of haematemesis, proctorrhagia, haematuria, contrast evidence of injury to ureter, kidney or bladder, evidence of left side diaphragmatic defect, and positive peritoneal lavage. The presence of bowel sounds did not exclude intra abdominal injuries. In our study, only one patient required a laparotomy, and the indication was a protruding omentum through the wound, which is an absolute indication as reported by Granson & Donovan<sup>8</sup>, where this type of injury is associated with 69% incidence of major intraperitoneal injury. With the surplus availability of ultrasound and Computerised Tomography scanners and Laparoscopy,<sup>1</sup> there is less tendency to perform peritoneal lavage, and the consensus is that if there is an indication for peritoneal lavage, then there is an indication to laparotomy. However, peritoneal lavage may be of use where

there is altered level of consciousness resulting in unreliable clinical examination<sup>5</sup>.

Six of our patients required a chest drain for stab wounds in the chest, and non required a thoracotomy. In general, however, the indication for urgent thoracotomy include an initial drainage of greater than 1.5 litres as suggested by McNamara *et al*<sup>9</sup>, or resistant bleeding as assessed by vital signs and the output of fresh blood from the chest drain.

The majority of the assailants (41%) were unknown in our study, and 33% of the attacks were carried by multiple assailants, and this reflects the new 'gangster phenomena' or 'knife culture' that has emerged recently. This was not reported in the study done in our hospital ten years ago (Fig 8). Despite the high incidence of stabbings in our region, the majority of the stabs were in the upper and the lower limbs, which are not fatal regions. This is to the contrary of other studies from the Homerton Hospital which showed the chest to be the prime target.

## CONCLUSION

The incidence of stab wounds presented to our institute is one of the highest, at 90 per 100,000 per year, although there were three mortalities only. Men are more affected than women, but there was an increase in targeting women over the past ten years in our region, as well as a significant increase in victims attacked by multiple assailants. The upper and the lower limbs are the commonest organs injured followed by the chest.

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