

Rounded knives campaign would help save the lives of many around world

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Summary

Bladed weapons and sharp instruments are increasingly encountered in violent offences around the world, including street based and armed robberies, homicide, sexual assaults, and terrorism. Kitchen knives are the major contributor to this criminality, and the cause of accidents within the domestic setting, often resulting in injuries and fatalities. This paper details a research study [1] that was undertaken using clothing garments, to investigate novel rounded knives in a stabbing motion, which concluded that no fabric damage occurred, compared to the significant damage caused by knives with pointed blades. These findings and recommendations will be of interest to international governments, law enforcement agencies, healthcare professionals, investigators of knife crime offences, crime-reduction units, charities, NGOs, knife manufacturers and practitioners, to share one mutual goal in advocating a safer alternative to conventional knife design.

Key messages

- **Promote the use of rounded knives as safer alternatives to hazardous pointed knives.**
- **Campaign governments to form legislation regarding the restriction of pointed knives.**
- **Engage with knife manufacturers and retailers to create and supply rounded knives.**

Introduction

Within England and Wales, there were 49,027 knife enabled offences in the year ending March 2022 [2], with more than 4,100 hospital admissions for assault by a sharp object. The UNODC 2019 Global Study on Homicide [3] reported sharp objects were responsible for more than 97,000 homicides worldwide, and more than 50 per cent of the total homicides in the following countries: Algeria, Azerbaijan, Bahrain, Bhutan, Cuba, Grenada, Guyana, Hungary, Kazakhstan, Morocco, Poland, Qatar, Singapore, Slovenia, Sri Lanka, and the United Republic of Tanzania. The UK Home Office Homicide Index recorded sharp instruments, including kitchen knives, as the most frequently used weapon for male and female homicides. [4] The United Nations is campaigning to end violence against women and girls, where statistics have shown the perpetrators responsible for more than 58 per cent of female homicides are known to the victim and the location is most likely the domestic setting. [5] Politicians, World Health Organisation, medical experts, the judiciary, clergy, and academics have collectively highlighted the issue of pointed knives, as being the primary factor in causing injuries and fatalities in stabbing incidents, whilst highlighting the necessity for preventative measures such as safer knife designs, increased educational intervention, and public policy change. [6, 7, 8, 9, 10, 11].

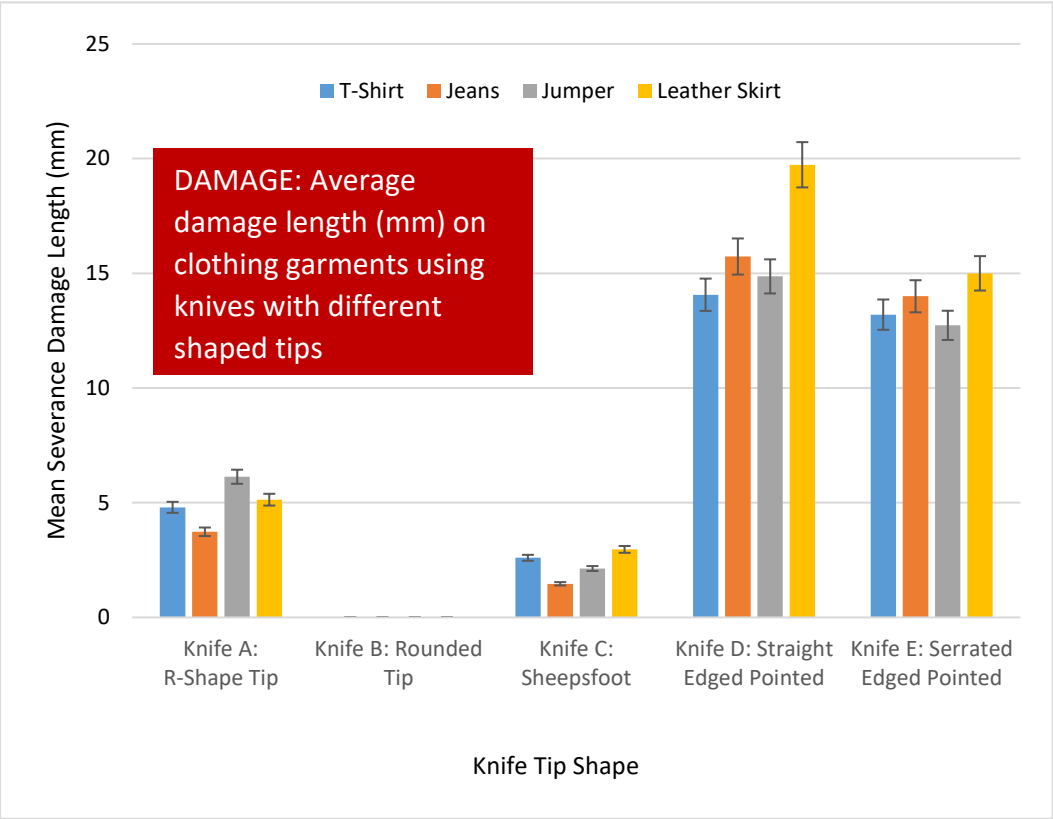
Research study

The aim of the research study was to investigate the comparison of conventional pointed knives with novel knives with different shaped tips. Four clothing garments were used - two upper (T-shirt, jumper) and two lower (jeans and faux leather skirt), which replicated typical exhibits submitted to the forensic laboratory and reflected the most targeted bodily areas in stabbing incidents (torso/trunk). More than 300 downward

stabbing motions were conducted. Any resulting damage was photographed and measured for statistical analysis.

Results

The graph below shows the mean severance damage for each knife and each clothing garment. Both pointed knives: D (straight edged pointed) and E (serrated edged pointed) caused the greatest damage, followed by knives A and C. The only knife not to penetrate the garments was knife B (rounded tip) offering a safer alternative.



	Knife A: R Shaped	Knife B: Rounded	Knife C: Sheepfoot	Knife D: Straight Edge Pointed	Knife E: Serrated Edge Pointed
T-shirt					
Jeans					
Jumper					
Leather Skirt					

The table, left, shows images of the damage from five knives on four clothing fabrics. The damage varies depending on the knife used. The most severe damage was produced by both pointed knives (D and E), resulting in pronounced openings in the garments. Knives A and C created small holes. Whereas knife B impacted the fabrics (this can be seen on the T-shirt and leather skirt), but the rounded tip blade failed to penetrate. The ability of a fabric to impede a stabbing action, could

potentially offer protection in the event of a knife incident. By combining this information with the effect of knife tip shape, a 'hazard map' of knife and clothing combinations was constructed that ranges from very limited (green) to very significant (red) damage. The rounded knife was rated as 'green', as none of the fabric surfaces were breached.

Conclusion and recommendations

A research study established a relationship between knife tip design and clothing damage resulting from the knife being used in a penetrating stabbing action. Conventional pointed tipped knives produced the greatest damage, whereas a novel knife with a rounded tip blade resulted in no significant damage to any of the garment fabrics. This suggests a clear alternative to pointed tip knife blades, offering an opportunity for crime reduction – a knife of culinary utility without the possibility of accidental injury, and with little or no value in violent crime.

Recommendation 1: Promote the use of rounded knives as safer alternatives to hazardous pointed knives

To educate communities with accessible age specific information regarding rounded knives as alternative culinary tools. Communicating research findings to the public in an open, transparent, and informative way.

Recommendation 2: Campaign governments to form legislation regarding the restriction of pointed knives

To encourage policymakers and stakeholders to create policies as a public healthcare and safety measure. Multi-agency involvement of health professionals, police, judiciary, charities; integrating expertise and influencing strategy.

Recommendation 3: Engage with knife manufacturers and retailers to create and supply rounded knives

To work in collaboration to share the goal of designing and providing safer alternatives to conventional pointed knives. Creating partnerships for changing blade tip design as proactive crime reduction and accident prevention opportunities.

About the author

Leisa Nichols-Drew is a Chartered Forensic Practitioner, National Teaching Fellow and an Associate Professor at De Montfort University Leicester. Leisa's expertise is in the forensic science laboratory evidential examination, recovery, and documentation of crime scene exhibits, from a range of knife crime offences. One of Leisa's subject specialisms is the analysis of clothing for severance damage or sharp force trauma, which can be used to identify the weapon or instrument responsible such as knives, screwdrivers, or scissors. Leisa's Churchill Fellowship has led to updates to UK police forces, and a submission to the House of Lords forensic science enquiry. This innovative research has been disseminated around the world, and was recognised with a collaboration award.



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