

**A RETROSPECTIVE COMPARATIVE STUDY OF HOMICIDE DEATHS  
IN KOSOVO FROM 2006-2015**

By

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## **Declaration**

I declare that this thesis does not contain any material submitted previously for the award of any other degree or diploma at any university or other tertiary institution. Furthermore, to the best of my knowledge, it does not contain any material previously published or written by another individual, except where due reference has been made in the text. Finally, I declare that all reported experimentations performed in this research were carried out by myself, except that any contribution by others, with whom I have worked is explicitly acknowledged.

Dated: 16.11.2018

Signed: Sophie van Wyngaarden

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**PART ONE**

LITERATURE REVIEW

A RETROSPECTIVE COMPARATIVE STUDY OF HOMICIDE DEATHS IN KOSOVO  
FROM 2006-2015

## **ABSTRACT**

Homicide comparison between countries is generally difficult, unless the method for documenting homicides is standard between the countries of comparison. A scant number of reputable retrospective homicide studies have been published and of the studies that are available, there is no standardisation. Homicide data for the country of Kosovo has been documented by the Institute of Forensic Medicine (IFM) in Pristina. The homicides registered by the IFM from 2006-2015 in Kosovo were retrospectively studied and significantly this revealed that in 73.76% of all homicides committed, firearms were the weapon used. Limited specific firearm data is readily available for the country of Kosovo, further follow up studies and better recording of evidence are required to ascertain for certain why firearms are so widely used in homicides. Although a general downward trend since 2006 in the number of homicides per 100,000 population was identified, presently there is no enforced standard method for the reporting of all deaths in Kosovo, including homicides. Therefore, this study aims firstly to publish Kosovar retrospective homicide data for the use as a prevention and reduction tool and additionally to critically review global estimations of homicide rates and the available international retrospective homicide literature, to more accurately identify and establish a standardised method for the reporting of homicides. Fundamentally the findings of this study will be utilised to provide the IFM in Kosovo with a critical review of the approaches regarding the documentation of homicides and recommendations, to further their practice in the recording and analysis of homicides in Kosovo.

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## **LIST OF ABBREVIATIONS**

<b>CPC</b>	Criminal Procedure Code
<b>ICD</b>	International Classification of Diseases
<b>IFM</b>	Institute of Forensic Medicine
<b>KFOR</b>	Kosovo Force
<b>NATO</b>	North Atlantic Treaty Organization
<b>NHMP</b>	National Homicide Monitoring Program
<b>OMPF-MEO</b>	The Office on Missing Persons and Forensics “Medical Examiner’s Office”
<b>UNODC</b>	United Nations Office on Drugs and Crime
<b>OSCE</b>	Organisation for Security and Co-operation
<b>UNDP</b>	United Nations Development Programme
<b>UNMIK</b>	United Nations Interim Administration Mission in Kosovo
<b>WHO</b>	World Health Organisation

## **1 Introduction**

Kosovo is situated in the western Balkan region and is a newly founded country since its formal declaration of independence in 2008.<sup>1</sup> Kosovo has seven specific districts; Ferizaj, Gjakova, Gjilan, Mitrovica, Peja, Pristina and Prizren. The areas and populations of each district were recorded in the 2011 census.<sup>2</sup> The capital city of Kosovo is Pristina and it has the greatest area and population, which has been recently estimated at approximately 210,000 out of a total population of approximately 1.8 million<sup>3</sup>. Since the 1999 Kosovo War, the country has been a United Nations (UN) protectorate under the UN Interim Administration Mission in Kosovo (UNMIK) and protected by the international NATO-led Kosovo Force (KFOR).<sup>4</sup> Post war, the country still faces many challenges and high unemployment rates are a catalyst for the growth of poverty. As of 2015, the World Bank estimated that 17.6% of the population were living below the poverty line in Kosovo.<sup>5</sup> The Kosovo 2014 Labour Force Survey conveyed that in 2014 approximately 35.3% of the population were without work, of these unemployed citizens 61% were youth aged between 15 to 24 and females accounted for 71.7% of the unemployed youth.<sup>6</sup> The standard of living within Kosovo is however slowly improving.

The criminal justice system in Kosovo is continuing to evolve; the Criminal Procedure Code (CPC) (Criminal No. 04/L-123) was enacted in Kosovo in 2013, which adjusted the inquisitorial system of Kosovo whereby judges were involved in the sourcing and presentation of evidence, to an adversarial system.<sup>7</sup> Since its introduction, the CPC judges are expected to ensure the protection of the defendants' rights and the prosecution and defence were given the roles of presenting and questioning the standard of evidence.<sup>7</sup> In 2016 the Organisation for Security and Co-operation (OSCE) carried out a review of the

implementation of the CPC and uncovered that the adversarial system was not being enforced to an adequate standard.<sup>7</sup> Judges were still acting as the 'gatherers of evidence' and not the defence and prosecution, which may have been attributed to a lack of appropriate training.<sup>7</sup> Many defendants were denied a fair trial as they presented cases in court without a defence counsel and struggled to produce a strong case.<sup>8</sup>

In regards to court proceedings a standard and efficient data collection system for homicides is of utmost importance. If countries lack the resources or are overwhelmed by incidents, statistics relevant to homicide occurrence may not be available and might never be published. Homicidal deaths occur through many means, including: firearms, sharp force instruments, blunt force weapons, asphyxia, homicidal hanging, drowning, burns and poisoning, in Kosovo, there is an absence of such data. However, Professor Flamur Blakaj of the Institute of Forensic Medicine (IFM) in Pristina, Kosovo has collated anonymised homicide data from the post conflict years 2006-2015. The following were collected from the Institutes medico-legal examinations:

- the number of homicides per year in Kosovo.
- demographics such as victim gender, age brackets, season and residential area.
- mechanism of death, body region of wound and wound count.
- the frequency of homicides in the seven districts of Kosovo: Ferizaj, Gjakova, Gjilan, Peja, Pristina and Prizren.

The Office on Missing Persons and Forensics "Medical Examiner's Office" (OMPF-MEO) in Pristina, Kosovo also maintain data in relation to homicide cases, but only in instances where they conduct crime scene attendance. The figures obtained from the OMPF-MEO are therefore not a full representation of the homicides in Kosovo and this information is

already included within the data collected during medico-legal examinations. Data was unable to be sourced from the Kosovo Police ballistics unit and therefore in depth analysis of the firearms used in the homicides from 2006-2015 will not be discussed, this mechanism of death in Kosovo requires further research.

### **Research Aims**

To date, there is no standardised method of recording and publishing data related to homicides in Kosovo. The World Health Organisation (WHO) does however have guidelines such as the International Classification of Diseases (ICD) available and standard WHO medical certificates.<sup>9</sup> Within the ICD there are specific case scenarios to assist with the recording of death.<sup>9</sup> Therefore, the aim of this study is to critically review international homicide literature and establish an effective standardised method for the publishing of homicide data in Kosovo, whilst meeting the following objectives:

- Publishing post-conflict Kosovar homicide data from the years 2006 to 2015 so that it can potentially be used to reduce and prevent the number of homicides.
- Identifying if any regions of Kosovo exhibited high rates of homicide in proportion to population size.
- Comparing the homicide statistics gathered from Kosovo to regional studies, as well as to countries internationally.
- Providing recommendations to the IFM to standardise the documentation of homicides in Kosovo.

Through critically reviewing the literature it is anticipated that the Kosovar homicide data can be compared, regionally and internationally to other countries. Retrospective homicide studies from international peer-reviewed journals will be utilised, along with global reports

on homicide deaths. The comparative aspect of this research depends on the availability of robust and accurate homicide studies. A standardised method of representing homicides will be formulated, as well as recommendations to improve the recording and analysis of homicides at the IFM in Kosovo.

## **2 Discussion**

The discussion section will examine the IFM homicide data, review global estimations of homicide rates and international retrospective homicide studies. This entails discussing the representation of global homicide figures such as: the number of homicides, the gender, sex and age of victims, as well as perpetrators, mechanism of death, cause of death, seasonality, drug and alcohol influence and location. Furthermore, this section will distinguish the methods of reporting homicides that can be utilised to standardise the documentation in Kosovo.

### **2.1 Intentional Homicide Rate of Kosovo**

Almost half a million (437,000) people across the world were the victims of intentional homicide in 2012.<sup>9</sup> The 'Global Study on Homicide 2013' addressed intentional homicide - "the unlawful death purposefully inflicted on a person by another person".<sup>10</sup> The UN Office on Drugs and Crime's International Homicide Statistics database has a record of the number of intentional homicides in Kosovo from 2008-2015 per 100,000 people, as shown in Figure 1.<sup>11</sup> The homicide rate was the highest in 2008 and the lowest in 2015 and the database shows a decline in the number of homicides per 100,000 people from 2012 to 2015.<sup>11</sup> 2008 was a significant year for the country of Kosovo; independence was declared and the 2008 unrest in Kosovo followed.<sup>12</sup> Tensions in the Northern area of



Kosovo flared and UN police and NATO forces responded to Mitrovica where attacks by protestors left one UN police officer dead.<sup>12</sup>

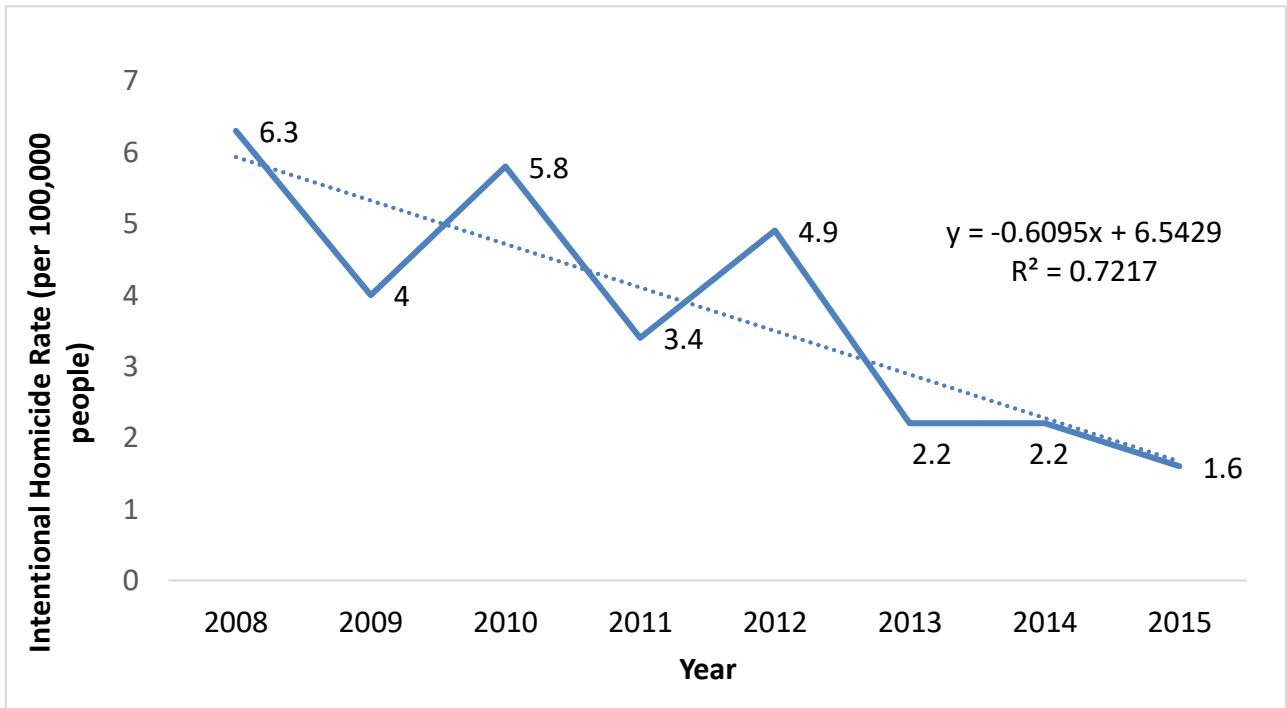


Figure 1: Adapted from World Bank, the Kosovo intentional homicide rates (per 100,000 people) from 2008-2015.<sup>11</sup>

## 2.2 Kosovo Homicide Data Sourced from the IFM

### 2.2.1 The Number of Homicides in Kosovo from 2006-2015

The IFM in Pristina, Kosovo perform medico-legal, biological examinations and formally record all known deaths within the country. The IFM maintain their own record of the number of homicides per year (Table 1), which can be converted to figures per 100,000 people, as depicted in Figure 2. In comparison to the UN Office on Drug's and Crime's (UNODC)'s intentional homicide statistics database (Figure 1) the IFM figures were lower overall.<sup>11</sup> Unlike the UNODC data, the IFM recorded the highest number of homicides

prior to the declaration of independence in 2007, not 2008. Discrepancies between the UN database and the IFM may be attributed inconsistent data collection in the recording of deaths in Kosovo and the definition of what constitutes a homicide. The results of the retrospective analysis of the IFM data revealed a declining trend in the Kosovar homicide rate per 100,000 people over the ten-year period, shown in Figure 2. Since 2006 the number of homicide incidents has fallen 38%, decreasing from 63 cases in 2006 to only 25 in 2015 (Table 1).

Table 1: The number of homicides in Kosovo recorded by the IFM per year from 2006-2015, in relation to the population data each year from the World Bank.<sup>13</sup>

<b>Year</b>	<b>Population</b>	<b>Number of Homicides in Kosovo</b>
<b>2006</b>	1,719,536	63
<b>2007</b>	1,733,404	68
<b>2008</b>	1,747,383	47
<b>2009</b>	1,761,474	53
<b>2010</b>	1,775,680	68
<b>2011</b>	1,791,000	44
<b>2012</b>	1,805,200	56
<b>2013</b>	1,824,100	38
<b>2014</b>	1,821,800	41
<b>2015</b>	1,801,800	25

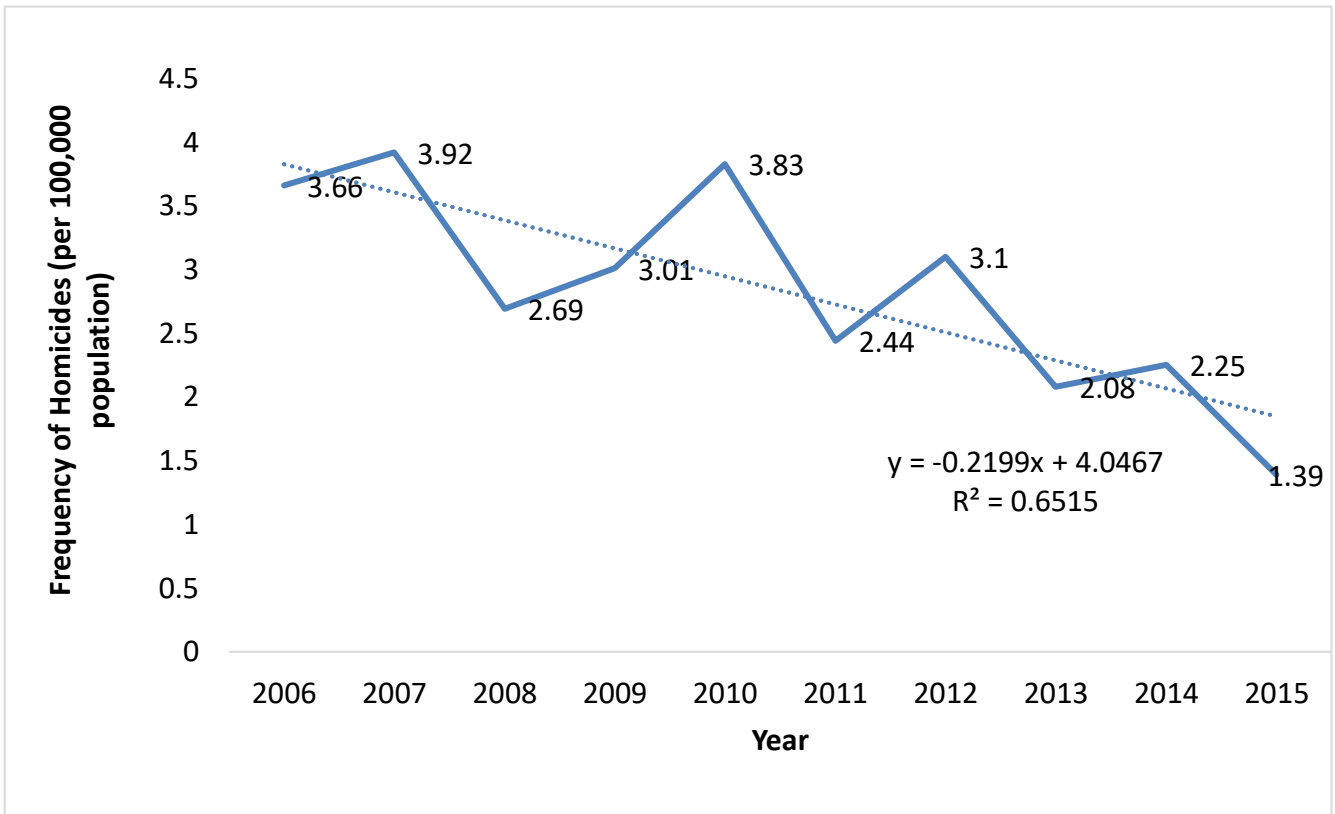


Figure 2: The IFM records of the frequency (per 100,000 population) of homicides in Kosovo per year from 2006-2015.

### 2.2.2 The Number of Homicides by Region in Kosovo

The IFM have also retained a record of the number of homicides in each of the seven districts of Kosovo from 2006-2015, as shown in Figure 3. The highest numbers of homicides were recorded for Pristina, the largest and most populous district of Kosovo. The districts of Ferizaj and Giljan both had equally the lowest numbers of homicides in Kosovo. The number of homicides in Peja was notably high, when accounting for the fact that Peja is the least populous district of Kosovo. The frequency of homicides each year in relation to the population of each district are still to be considered.

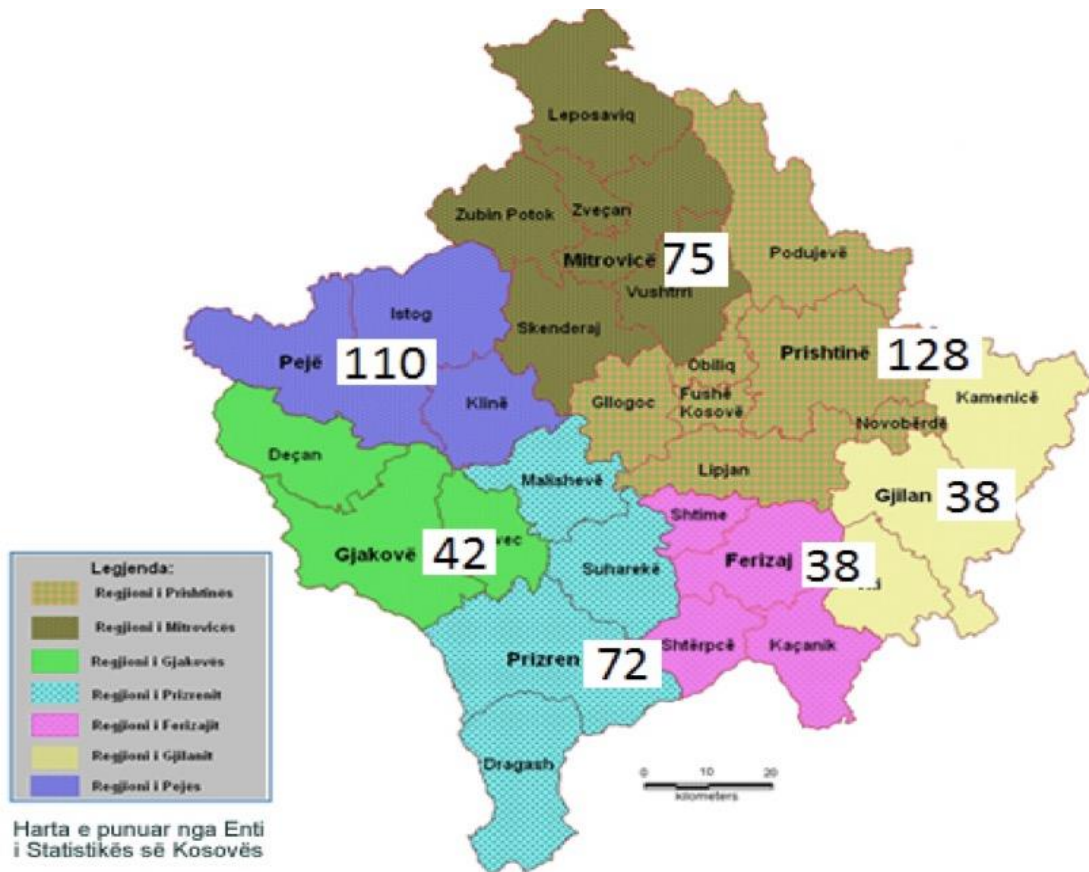


Figure 3: As sourced from the IFM database, the frequency from 2006-2015 of homicides in each of the following seven specific districts of Kosovo: Ferizaj, Gjakova, Gjilan, Mitrovica, Peja, Pristina and Prizren.

### 2.2.3 Demographical Homicide Information from Kosovo

The data presented in Table 2 was also sourced from the IFM and it provides a breakdown of the demographical homicide information collected at the Institute from 2006-2015. The data revealed that the incidence of male homicide victims was higher than for women. Most homicides occurred in the season of spring, although the homicides were almost equally distributed across the year. Most of the victims were aged between 21-50 years old and the highest number of homicides were recorded for the 21-30 years old age group. Slightly more homicides occurred in rural villages, than in

urban city residential areas, however the number of homicides in urban and rural areas each year as a percentage of the total population is yet to be evaluated.

Table 2: The victim gender, season, victim age and residential area of homicides in Kosovo from 2006-2015, as recorded by the IFM.

<b>Demographics</b>	<b>Frequency</b>	<b>Percentage</b>
<b>Victim Gender</b>		
Male	438	87.10
Female	65	12.90
<b>Victim Age</b>		
0-10	5	1.00
11-20	57	11.30
21-30	133	26.40
31-40	102	20.30
41-50	97	19.30
≥ 50	109	21.70
<b>Residential Area</b>		
Urban (city)	239	47.50
Rural (villages in the country)	264	52.50
<b>Season</b>		
Spring (21/3 – 22/6)	117	23.30
Summer (22/6 – 23/9)	145	28.80
Autumn (23/9–22/12)	120	23.90
Winter (22/12 – 21/3)	121	24.10

#### **2.2.4 Wounds Inflicted During Homicides in Kosovo**

The IFM also collate data pertaining to the injuries relative to a body region and number of wounds in each homicide event. Table 3 relays the body region of wounds inflicted

during the homicides committed in Kosovo between 2006-2015. The results show that most injuries occurred to the trunk, followed by the head and in most cases death was because of multiple wounds, as shown in Table 4.

Table 3: Body region of wounds inflicted during homicides in Kosovo from 2006-2015, as noted by the IFM.

<b>Body Region of Wound</b>	<b>Frequency</b>	<b>Percentage</b>
<b>Extremities</b>	2	0.40
<b>Extremities (Femoral Artery)</b>	14	2.80
<b>Head</b>	79	15.70
<b>Head and Neck</b>	1	0.20
<b>Head and Trunk</b>	68	13.50
<b>Head, Trunk and Extremities</b>	15	3.00
<b>Neck</b>	12	2.40
<b>Trunk</b>	242	48.10
<b>Trunk &amp; Extremities</b>	52	10.30
<b>Other (Asphyxia and Drowning or Explosion)</b>	14	2.80

Table 4: The number of wounds recorded by the IFM for each homicide in Kosovo from 2006-2015.

<b>Wound Count</b>	<b>Frequency</b>	<b>Percentage</b>
<b>Single</b>	176	35.00
<b>Multiple</b>	313	62.20
<b>Other (Asphyxia and Drowning or Explosion)</b>	14	2.80

### 2.2.5 Mechanism of Death in Kosovo

Figure 4 illustrates the mechanism of death for the homicides occurring in Kosovo from 2006-2015, as sourced from the IFM in Kosovo. Mechanism of death was grouped into firearm, blunt force, sharp force, asphyxia and other. The other category included three cases of explosion and one of drowning/asphyxia in 2010. Of the 503 homicide cases, only 0.8% (4) were due to other mechanisms of death, 2% (10) were asphyxia, 14.91% (75) were sharp force and 8.5% (43) were blunt force. Of importance in Figure 4 is the high number of deaths attributed to firearms across all years; 73.76% (371) of all homicides committed throughout 2006-2015 were because of firearms. It is hence necessary to evaluate the laws regarding guns, as well as the availability and access to firearms in Kosovo.

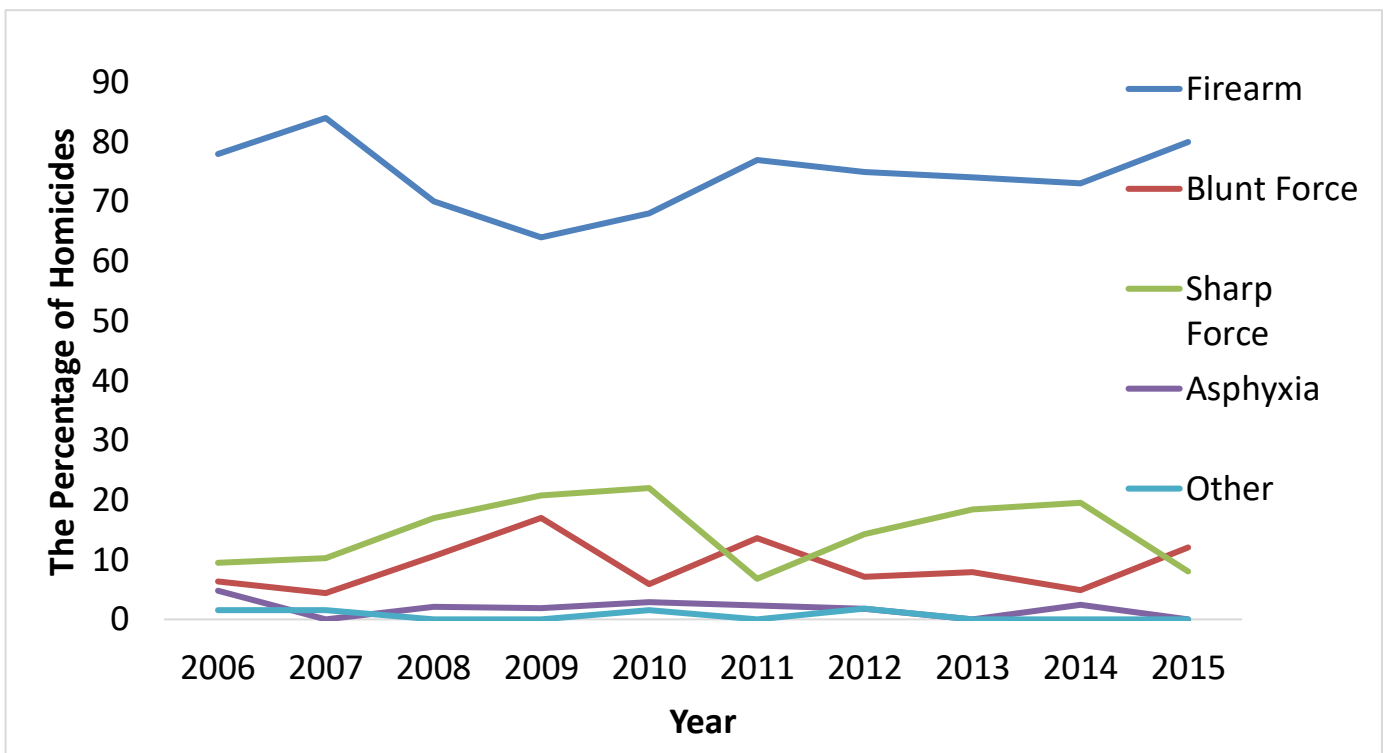


Figure 4: Mechanism of death for the homicides occurring in Kosovo from 2006-2015, taken from data collected at the IFM in Pristina, Kosovo.

### **2.3 Firearms in Kosovo**

No firearm data could be sourced from the police ballistics unit in Kosovo during this study, although earlier in 2003, a study of the small arms and light weapons in Kosovo commissioned by the United Nations Development Programme (UNDP) was published.<sup>14</sup> A key finding was that there were an estimated 330,000 to 460,000 small arms held by civilians, as of 2003 in Kosovo.<sup>14</sup> Of these weapons, pistols such as Zastavas and TT's (Tula-Tokarev), as well as assault rifles such as Kalashnikovs and Zastavas were the most common.<sup>14</sup> Zastavas, Kalashnikovs and TT's are produced by the Serbian manufacturer Zastava Arms, originally intended for Yugoslav police and certain military officers.<sup>14</sup> The ownership of these guns was higher in the countryside than the city centres.<sup>14</sup> There was a higher presence of firearms in Mitrovica and Peja when compared to Gjilan and Prizren, Pristina was somewhere in the middle.<sup>14</sup> The elevated small arm numbers in Mitrovica correspond with the high number of homicides documented by the IFM in this region of Kosovo. Although, it is yet to be determined whether firearm ownership is directly related to the number of homicides in each region of Kosovo. More homicides occurred in Pristina, however small arms were more extensive in Mitrovica and Peja.

Of significance is knowledge regarding the ownership of the firearms in Kosovo and what they are utilised for. Within the 2003 small arms survey, a large number of firearms were found to be owned by criminals and used predominantly in crime which represented greater than 70% of the murders committed in Kosovo.<sup>14</sup> Gun ownership was also high among entrepreneurs and ex-combatants, posing complications for weapons amnesties.<sup>14</sup> Collection of weapons and disarming politicians and public figures by the KFOR/UNMIK was challenging.<sup>14</sup> Arms trafficking appeared to be a minor issue and gun smugglers were



found to use the same routes as other trafficking.<sup>14</sup> Therefore, it was suspected that the small arms issue in Kosovo was mostly due to hurdles in the seizure of weapons. Further research and collection of data for the firearms of each specific homicide in Kosovo is important to effectively understand the high frequency of firearm homicides and whether further governmental policy change is required.

## **2.4 Laws of Kosovo**

The legislation regarding firearms will firstly be discussed, as the high number of firearm related deaths is a crucial finding of this study. Secondly the legislation surrounding homicides will be relayed. Reviewing the laws of Kosovo could indicate whether further policy change is required.

### **2.4.1 Legislation on Weapons in Kosovo**

Suchanek (2013) discussed the introduction of the 'Law on Weapons' and supplementary acts on weapon control in Kosovo between 2009 and 2011.<sup>15</sup> This legislation aimed to improve control over the civilian weapon market, reduce illegal firearm possession and enhance the seizure protocols of illegal firearms. Illegal possession of firearms and illicit weapon tracking are commonly encountered in post-conflict countries, as registered transactions for weapons transactions are often neglected.<sup>15</sup> Marking of weapons and ammunition is one way to ensure tracing of weapons, linking the producer of a firearm to the dealer and owner, as well as to determine any changes in the status of a weapon.<sup>15</sup> International standardised regulations must be followed for the marking of weapons to be successful. Suchanek (2013) concluded that if the UN and EU requirements for marking

of weapons in Kosovo were strictly followed, then it was likely that Kosovo would have a sound system for the tracing of weapons and ammunition.<sup>15</sup>

In 2015 the Assembly of the Republic of Kosovo enacted new legislation, Law No. 05/L - 022 on weapons, which defines and regulates the possession, manufacturing and acquisition of firearms in Kosovo.<sup>16</sup> Consent to purchase a firearm is required and reasons that are viable per article 11 include: carrying of a weapon, hunting and shooting range.<sup>16</sup> Carrying of a weapon is permitted for special cases of public safety that need to be defined with a sublegal act supplied by a proficient body.<sup>16</sup> Applicants for a firearm licence need to pass both theoretical and practical testing. Article 71 states the fines for both the legal entity and the natural person if violations of the law on weapons result.<sup>16</sup>

#### **2.4.2 Legislation Regarding Homicides in Kosovo**

The 2012 CPC (Criminal No. 04/L-123) of Kosovo outlines the laws that the courts, state prosecutor and other legal personnel must abide by during criminal proceedings.<sup>7</sup> At the start of 2013, after the introduction of the CPC, Kosovo adopted an adversarial judicial system and veered away from the prior inquisitorial system.<sup>7</sup> There are no specific laws regarding the maintenance of the casework and details of homicides within the CPC.

In 2016 the Kosovo 'Law on Forensic Medicine' (Law No. 05/L-060) was enacted and it regulates the IFM and their procedures for performing medico-legal examinations.<sup>17</sup>

Medico legal examinations encompass all the examinations of deceased, living persons and biological evidence.<sup>17</sup> This includes medico legal autopsies which are defined as: the external and internal examination of corpses to ascertain the cause, manner and

circumstances of death.<sup>17</sup> Medico legal autopsy is performed in cases of homicide or suspicious homicide, as stated in Article 5 (1.1).<sup>17</sup> There are no sections within the Kosovo 'Law on Forensic Medicine' that pertain to the recording of homicides.

## **2.5 Estimations of Global Homicide Deaths**

Vital registration and criminal justice reporting systems are the two main sources which most countries rely on for the proper recording of homicide deaths. In vital registration, the cause of death in relation to homicides is coded per the ICD and the WHO Mortality Database maintains this data.<sup>9,18</sup> Criminal justice reporting systems depend upon the collection of data by the police and court systems and this data has previously been compiled by the UNODC.<sup>10</sup> The number of homicide deaths reported through both sources are not always accurate and variation between the two is sometimes evident when countries utilise both.<sup>10</sup> Countries' definitions of homicide often differ, meaning that comparability between the homicide statistics of countries is difficult to achieve. Many countries also do not employ robust systems for the collection of homicide data and as such model-based estimates such as regression models need to be applied to estimate global homicide deaths.<sup>10</sup>

The 2014 WHO global status report on violence prevention estimated that there were over 475, 000 homicides globally in 2012, with the highest rates being in America and South Africa and the lowest in the Western Pacific and Western European regions.<sup>19</sup>

Estimations also revealed that globally homicide rates have dropped by 16%.<sup>19</sup>

Furthermore, in high income countries this decrease in homicides has been greater, at 39%.<sup>19</sup> Homicide statistics can be used to inform, as well as address the need for

prevention programmes. Crucially this report demonstrated that 60% of countries display deficiencies in usable homicide data.<sup>19</sup>

In 2012 homicide rates in high-income countries (all regions) were compared to homicide rates in low- and middle-income countries, as shown in Table 5.<sup>19</sup> Overall the homicide rate per 100,000 population was generally lower for high-income countries.<sup>19</sup> The highest rate was estimated for the Americas and the lowest was the Western Pacific Region.<sup>19</sup> The European region homicide rate was the same as that of high-income countries.<sup>19</sup>

Table 5: Estimations of the number of homicides and homicide rate per 100,000 population by WHO region and country income level in 2012.<sup>19</sup>

WHO region and country income level	Number of homicides	Homicide rate per 100 000 population
African Region, low- and middle-income	98 081	10.9
Region of the Americas, low- and middle-income	165 617	28.5
Eastern Mediterranean Region, low- and middle-income	38 447	7.0
European Region, low- and middle-income	10 277	3.8
South-East Asia Region, low- and middle-income	78 331	4.3
Western Pacific Region, low- and middle-income	34 328	2.1
All regions, high-income	48 245	3.8
<b>Global</b>	474 937 <sup>a</sup>	6.7

a. Includes 1604 homicides estimated for non-member states.

Estimations shown in Figure 5 revealed that international homicide rates from 2000-2012 have dropped from 8.0 to 6.7 per 100,000 population, a 16% decrease globally.<sup>19</sup> A more

notable change was seen for high income countries, there was a 39% decrease.<sup>19</sup> There was still a decline in middle and low income countries, but it was not noteworthy.

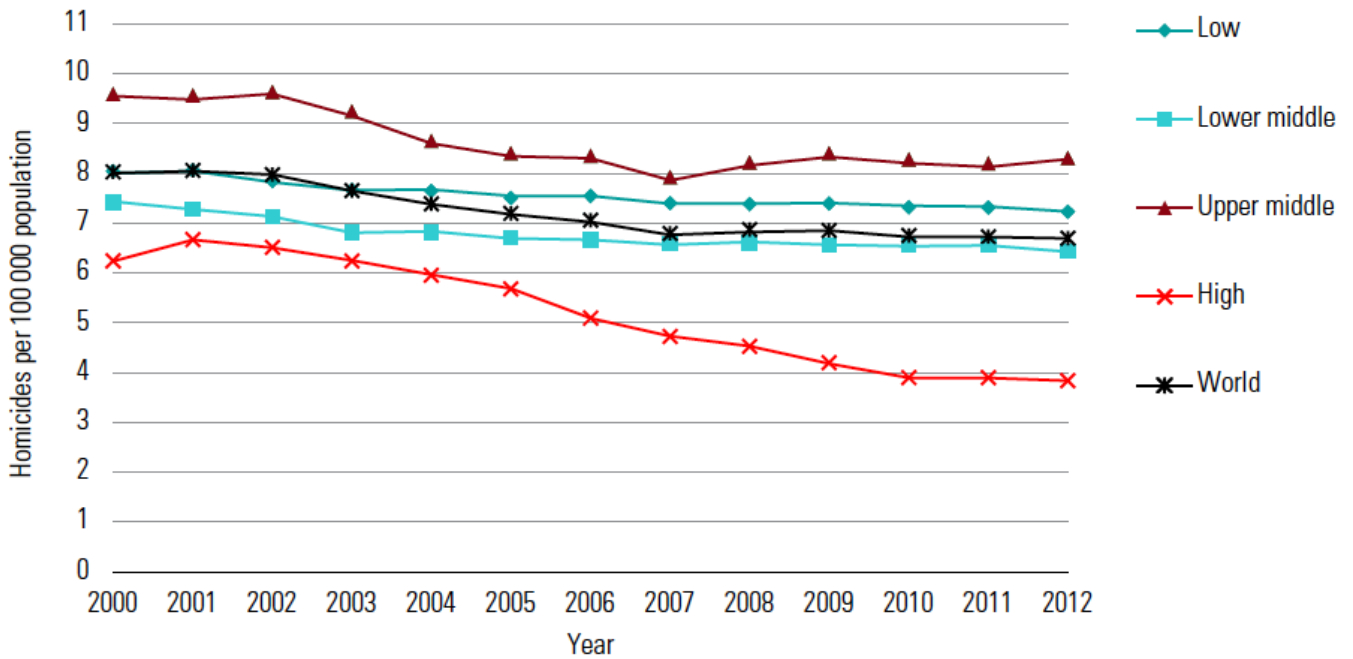


Figure 5: A 2000-2012 estimation of homicide rates by a countries income status.<sup>19</sup>

### 2.51 A Global Trend of Young Male Homicide Victims

Table 6 shows that males accounted for 82% of homicide victims globally in 2012, far exceeding their female counterparts.<sup>19</sup> The estimated homicide rate per 100,000 people for males was over four times the rate for females.<sup>19</sup> The highest homicide rate in the world estimated was for males aged 15-29 years, followed closely by males aged 30-44 years.<sup>19</sup>

Table 6: The homicide rate per 100,000 population for each age group and gender in 2012, per the global status report.<sup>19</sup>

Age group (years)	Homicide rate per 100 000 population		
	Male	Female	Total
0–4	2.8	2.7	2.7
5–14	1.7	1.2	1.5
15–29	18.2	3.2	10.9
30–44	15.7	2.7	9.3
45–59	10.2	2.0	6.1
> 60	6.7	2.7	4.5
<b>Total</b>	10.8	2.5	6.7

When women were the victims of homicide it was often domestic and their partners were usually responsible.<sup>19</sup> WHO estimated that 38% of female victims were victims of homicide committed by their male partners, in contrast to only 6% of men victims being in the same situation.<sup>19</sup> Of the data, available 20% was incomplete regarding the perpetrator-victim relationship.<sup>19</sup>

## 2.52 Homicide Mechanism Internationally

Homicide mechanism varies by country and region, depending on the access to and availability of firearms and sharp force instruments, as well as the type of homicide. As depicted in Figure 6 firearms are most commonly used in acts of homicide within the Americas, the Eastern Mediterranean Region and high-income regions.<sup>19</sup> Within the Region of the Americas firearms are highly widespread and prevalent.<sup>19</sup> Whereas within the European Region sharp force weapons and other means such as blunt force weapons are more commonly used.<sup>19</sup> It is therefore of interest that firearms are recorded by the IFM as by far the most common mechanism of death in Kosovo.



Figure 6: Homicide by mechanism and WHO region in 2012.<sup>19</sup>

## **2.6 Classification of Homicides in Australia and the United Kingdom**

The classification of homicides in Australia and the United Kingdom will be briefly discussed, to identify standardisation that could possibly be utilised. Although classification does vary between the two countries, similarities are seen. The United Kingdom also employs standard scene of death and method of attack classes.

### **2.6.1 Australia**

Mouzos (2017) conducted a comparative study of the three systems used to collect homicide data in Australia: The National Homicide Monitoring Program (NHMP) at the Australian Institute of Criminology (AIC), Recorded Crime Australia and Causes of Death (COD) collections, organised by the Australian Bureau of Statistics (ABS).<sup>20</sup> Distinct differences in homicide counts were recorded between the sources. In Australia, the NHMP at the AIC publishes reports every couple of years to oversee trends.<sup>20</sup> The number of homicides and the rate per 100,000 people in each state of Australia are tabulated and compared.<sup>20</sup> There is no universal method of categorising homicides, a 2010-2012 report did propose the following three classifications: domestic homicide, acquaintance homicide and stranger homicide.<sup>20</sup> Domestic homicides are those committed by a family member or the other person from a domestic relationship.<sup>20</sup> Acquaintance homicides are where the victim was known to the offender, though they were not family or in a relationship.<sup>20</sup> Stranger homicide covers all other homicides where the victim did not know their offender, or knew them for less than 24 hours.<sup>20</sup>



## **2.6.2 United Kingdom**

There are three offences associated with the Home Office definition of homicide in the United Kingdom; murder, manslaughter and infanticide.<sup>21</sup> Homicides are also categorised by the location they took place in and the method of attack. The location may fall in to one of the following classes: house, street or alley, pub or club, open space and other.<sup>21</sup> The method of attack is grouped by: sharp instrument, hitting or kicking, blunt instrument, shooting, strangulation, poisoning, causing to fall, suffocation and other.<sup>21</sup>

## **2.7 Retrospective Homicide Studies**

Retrospective homicide studies will be critically reviewed in this next section in relation to the following: homicide figures and population size, victim gender and age, perpetrator homicide data, mechanism of death, cause of death, influence of drugs and alcohol, seasonality and temporal trends, as well as location.

### **2.7.1 Homicide Figures and Population Size**

Of the available literature, many studies lack the reporting of homicide statistics in relation to population size per 100,000 people. Instead, some studies only provide the percentage of all medico legal autopsies that are homicides<sup>22-25</sup>, or simply the number of homicides per year.<sup>26</sup> To better understand the relationship between homicide, geographic location and population variations it would be necessary to relate homicide to population and to study differences between the years of differing population sizes.

Vij (2010) studied 89 victims of homicide and a trend of homicide incidence increasing every year in Mangalore, South India during the years of 2001-2005.<sup>22</sup> Increasing

population size was proposed as a potential explanation for the rising homicide rate in Mangalore, though no population data was provided to justify this proposition and the number of homicides per year was not scrutinized, the percentage of all autopsy cases that were homicides was noted.<sup>22</sup> A study by Mohanty (2013) in Southern India also opted to state the percentage of all medico legal autopsies that were homicides, rather than the number of homicides each year per 100,000 people.<sup>23</sup> Within Southern India from 2006 to 2011 population and urbanization were suggested as reasons for the increase in homicides and population data may have aided in corroborating these propositions.<sup>23</sup>

Pattarapanitchai (2010) investigated the distribution of homicide victims classified by the area of the police station in Bangkok Thailand that dealt with the homicide and the year the homicide occurred.<sup>26</sup> Despite this additional information, the utilisation of the population of Bangkok during each specific year may have supplemented the statistics and discerned whether the city had high rates of homicide in relation to population size. A subsequent study by Sakulsaengprapha (2018) identified decreasing rates of homicide and addressed the homicide rate per 100,000 people of Bangkok in comparison to countries internationally.<sup>27</sup>

Pearson's chi-square tests and student t-tests were employed by Temlett (2012) to conduct statistical analyses of Australian homicide data.<sup>28</sup> Data was divided into four decades and the results displayed that there were consistently higher numbers of non-Indigenous homicide victims when compared to Indigenous homicide victims.<sup>28</sup> However, when the homicide rates were determined by converting the figures to a number per

100,000 for each population group, the Indigenous homicide group was significantly ( $p < 0.001$ ) higher at 73.5-224 compared to the non-Indigenous group which was only 8.2-12.6.<sup>28</sup> This highlights the importance of assessing homicide figures as a homicide rate per 100,000 people, especially for standardisation and comparative aspects.

The most recent 2015 homicide rate of 1.6 per 100,000 people in Kosovo is on trend with other countries of the western Balkan region. For 2015 the homicide rate of Albania was 2.26, Bosnia and Herzegovina was 1.6, Croatia was 0.87, Montenegro was 2.7, Serbia was 1.18, and Macedonia was 1.06.<sup>19</sup> However, these figures were attained from the WHO mortality database, no retrospective studies were available to facilitate this comparison with Kosovo.

### **2.7.2 Victim Gender and Age**

There is no standard method for presenting homicide data such as victim gender and victim age data in journals. Most studies cite these two variables together<sup>22-31</sup> and other studies display the data individually, often with the percentage or number of male and female victims<sup>28,32-33</sup> and no victim age groups being present. Table 7 details the victim gender and mode victim age for the available international retrospective homicide studies. Victim gender was often expressed as a percentage of all cases, or the number of cases, which was converted to a percentage. The Indian study in Berhampur only discussed the percentage of each age group that were either male or female.<sup>23</sup> The mode victim age group was chosen to represent each study as variation in the age brackets of the studies made it challenging to compare the number of victims of each age group, studies with no mode age group often cited the average or median age of victims.

Summarising the gender and age emphasised the void in studies producing reputable, detailed data of homicide victims.

Although, it was still evident from the studies available that males were much more likely to be victims of homicide, no such articles were found where there was a higher percentage of female homicide victims and in all cases, greater than 50% of victims were male. This trend is on par with global estimations of homicide deaths.<sup>19</sup> The mode victim age did vary between studies and age brackets did differ between sources, but generally victims were young and often between 21-30 years old, verifying the international trend.<sup>19</sup>

Table 7: A summary of the victim gender and mode victim age from international retrospective homicide studies, in comparison to Kosovo.

Country, City or Region	Retrospective Year/s	Victim Gender (%)		Mode Victim Age Bracket
		Male	Female	
Brazil, São Paulo <sup>29</sup>	1993-1997	93.6	6.4	-
Canada, Newfoundland <sup>35</sup>	1985-1993	55.56	44.44	31-40
Eastern Croatia <sup>34</sup>	1970-1989	71.6	28.4	30-45
France, Tours <sup>24</sup>	2000-2003	71	29	50-59
India, Berhampur <sup>23</sup>	2006-2011	-	-	21-30
India, Indore <sup>32</sup>	2012	78.05	21.95	18-40
India, Mangalore <sup>22</sup>	2001-2005	79.8	20.2	21-30
Italy <sup>31</sup>	1980-1994	84	16	15-34
Italy, Brescia County <sup>30</sup>	1982-2012	64	36	21-30
<b>Kosovo</b>	<b>2006-2015</b>	<b>87.1</b>	<b>12.9</b>	<b>21-30</b>
Serbia <sup>33</sup>	1996-2005	92.2	7.8	-
South Australia <sup>28</sup>	1969-2008	62.11	37.88	-
Southern Denmark <sup>36</sup>	1983-2007	51.82	48.18	-
Thailand, Bangkok <sup>26</sup>	2003-2007	88.99	11.01	21-30
Thailand, Bangkok <sup>27</sup>	2009-2013	84.9	15.1	-
Turkey, Adana <sup>25</sup>	1997-2001	83.06	16.94	21-30

The country of Kosovo death by homicides from 2006 to 2015 mode victim age bracket was like most of the published research from international studies. Kosovo exhibited one of the highest percentage of male victims, in comparison to female victims. The 1993-1997 Brazil<sup>29</sup> and 2003-2007 Thailand<sup>26</sup> studies conveyed the highest male victim gender percentages, followed by Kosovo. Restricted comparison can be accomplished between the studies because they are from different time periods and scant research is available.

### 2.7.3 Perpetrator Homicide Data

Most research into homicides focuses on the percentage of victims that are a certain gender or a specific age, not the gender and age and the features of the assailants committing the homicides. Marcikić (1997) analysed homicides in eastern Croatia from 1970 to 1989 and relayed that 91.3% of the assailants were men and that 47.8% of the homicides were motivated by a quarrel between assailant and victim.<sup>34</sup> Gajić (2005) concentrated on the sociodemographic and psychiatric characteristics of perpetrators, for the homicides in the province of Vojvodina, Serbia from 1996-2005.<sup>33</sup> Most offenders were males, with a low level of education, who were under the influence of alcohol at the time of the homicide.<sup>33</sup> A psychiatric examination disclosed that approximately 71% of the subjects were suffering from a mental disorder and 84% of the perpetrators were dealing with alcohol addiction.<sup>33</sup> It is necessary to understand the relationships between mental health, alcohol and homicide as it could have ramifications for decreasing homicide counts. Limitations of this study are highlighted, particularly the lack of detailed offender information available when collecting data retrospectively.

Using retrospective data from 2000 to 2003, a review of homicide in Tours, France conveyed victim as well as assailant statistics, one of few retrospective studies that did connect the two.<sup>24</sup> Of the victims in Tours 51% were known to their assailant and in 26% of these cases they were a family member.<sup>24</sup> Similar findings were reported in the United Kingdom; it is detailed in the Association of Chief Police Officers (ACPO) Murder Investigation Manual of the United Kingdom that domestic and confrontation homicides account for just over half of all homicides and homicides committed by a current or former spouse are the most common domestic cases.<sup>21</sup> All other types of homicide are far

less frequent, with their incidence often being much less than 10 per cent, these are all outlined in Table 8.<sup>21</sup> Collecting the gender, age, toxicology and other sociodemographic characteristics of the perpetrators and the victims is pivotal to understanding homicides, why they are perpetrated and how they can be reduced or prevented. These details need to be properly recorded and maintained for retrospective analysis of offenders to proceed. The IFM in Kosovo does not maintain perpetrator data and homicides are not classified by type.

Table 8: The types of homicide in the United Kingdom, as outlined in the ACPO Murder Investigation Manual.<sup>21</sup>

<b>Types of Homicide</b>
Domestic homicide, which is sub-divided into: <ul style="list-style-type: none"> <li>Current or former spouse</li> <li>Sexual rival</li> <li>Parent/Child</li> <li>Child/Parent</li> <li>Other (eg, siblings/in-laws)</li> </ul>
Homicide in the course of other crime, which is sub-divided into: <ul style="list-style-type: none"> <li>Robbery</li> <li>Burglary</li> <li>Other gain</li> <li>Sexual attack (unrelated individuals)</li> <li>Resisting/avoiding arrest</li> </ul>
Gang homicide
Confrontation homicide (unrelated individuals)
Jealousy/vengeance (unrelated individuals)
Reckless acts (unrelated individuals)
Racial violence
Other unspecified circumstance (unrelated individuals)
Unusual cases, which are sub-divided into: <ul style="list-style-type: none"> <li>Serial murder</li> <li>Mass homicide</li> <li>Terrorism</li> <li>Homicide among children under 17 (unrelated)</li> </ul>
Context/motive unknown

#### **2.7.4 Mechanism of Death**

Mechanism of death is repeatedly explored in retrospective homicide literature.

Although, sometimes studies exclusively focus on one mechanism of death such as:

homicidal sharp force<sup>37-41</sup>, firearms<sup>42-48</sup> or less commonly, ligature strangulation<sup>49</sup>. There are gaps evident within retrospective homicide literature in respect to mechanism of death, few studies providing the percentage of firearm, sharp force, asphyxia and blunt force cases. Ideally the percentage of all cases, as well as the number of cases that are each specific mechanism should be stated for international and regional comparison.

The way that each country classifies mechanism of death also differs, often firearm, sharp force, asphyxia and blunt force are the four main categories. The “other” classification of death is often used to record less common mechanisms such as: explosion, thermal agents, falling from heights, poisoning, neglecting, drowning, driving over, use of an axe, unknown and multiple mechanisms of death. Vij (2010) also documented the type of sharp and blunt traumas causing death, for sharp trauma the classifications were the following: stab, chop or incised and for blunt trauma they were either: abrasion, contusion or laceration.<sup>22</sup>

Table 9 presents the data available regarding the number and/or percentage of homicides that are firearm, sharp force trauma, asphyxia or strangulation, blunt force trauma and other in retrospective homicide studies globally. The data from the IFM in Kosovo is included as a comparison. However, comparison between the various studies with Kosovo cannot fully be achieved because the retrospective years differ and they are not standard, extrapolating data from the research papers proved to be difficult and the data was not



available. For example, in some research asphyxia was classified as the cause of death and the mechanism of death was ligature or throttling<sup>22,32</sup>, whilst others referred to asphyxia as only the mechanism of death<sup>26</sup>.

Table 9: The number and/or percentage of firearm, sharp force, asphyxia or strangulation, blunt force and other homicides in international retrospective homicide studies, in relation to Kosovo.

COUNTRY, CITY OR REGION	RETROSPECTIVE YEAR/S	NO. FIREARM (%)	NO. SHARP FORCE TRAUMA (%)	NO. ASPHYXIA (%) *	NO. BLUNT FORCE TRAUMA (%)	NO. OTHER (%) **
<b>Brazil, São Paulo</b> <sup>29</sup>	1993-1997	(78.7)	-	-	-	-
<b>Canada, Newfoundland</b> <sup>35</sup>	1985-1993	8 (17.78)	16 (35.56)	5 (11.11)	12 (26.67)	4 (8.89)
<b>Eastern Croatia</b> <sup>34</sup>	1970-1989	(23.2)	(42.9)	(4.75)	(19.4)	(9.8)
<b>France, Tours</b> <sup>24</sup>	2000-2003	25 (40)	10 (16)	5 (6)	23 (36)	-
<b>India, Berhampur</b> <sup>23</sup>	2006-2011	86 (14.58)	216 (36.61)	20 (3.39)	144 (24.41)	124 (21)
<b>India, Indore</b> <sup>32</sup>	2012	6 (7.32)	18 (21.95)	14 (17.1)	26 (31.71)	18 (21.95)
<b>India, Mangalore</b> <sup>22</sup>	2001-2005	2 (2.3)	44 (49.4)	8 (9.0)	31 (34.8)	10 (11.2)
<b>Italy</b> <sup>31</sup>	1989-1992	(75)	-	-	-	-
<b>Italy, Brescia County</b> <sup>30</sup>	1982-2012	104 (41.4)	82 (32.7)	30 (12)	22 (8.8)	13 (5.18)
<b>Kosovo</b>	<b>2006-2015</b>	<b>371 (73.76)</b>	<b>75 (14.91)</b>	<b>10 (1.99)</b>	<b>43 (8.55)</b>	<b>4 (0.8)</b>
<b>South Australia (Indigenous population only)</b> <sup>28</sup>	1969-2008	12 (13.33)	32 (35.55)	2 (2.22)	37 (41.11)	7 (7.78)
<b>Southern Denmark</b> <sup>36</sup>	1983-2007	27 (20)	52 (38)	29 (21)	20 (15)	9 (6)
<b>Thailand, Bangkok</b> <sup>26</sup>	2003-2007	77 (35.32)	62 (28.44)	4.13 (9)	64 (29.36)	6 (2.75)
<b>Thailand, Bangkok</b> <sup>27</sup>	2009-2013	45 (37.8)	42 (35.3)	4 (3.4)	28 (23.5)	-
<b>Turkey, Adana</b> <sup>25</sup>	1997-2001	340 (54.83)	218 (35.16)	11 (1.77)	38 (6.12)	13 (2.09)

\* Throttling and strangulation were also recorded as asphyxia.

\*\* The other category included: explosion, thermal agents, falling from heights, poisoning, neglecting, drowning, driving over, axe, multiple.

Mechanism of death data for Brazil, São Paulo was provided within the 1993-1997 study, although the study was more focused on firearms potentially because the rate was

highest at 78.7% in firearm homicide.<sup>29</sup> This was a limitation in the methodology of this research, the percentage of cases each year that were firearms was compared to a secondary group known as “other”.<sup>29</sup> Mechanism of death was however also assessed by the distribution of gender, a feature that not all studies explored, similarities were revealed between males and females.<sup>29</sup> The same limitation was observed within the 1989-1992 Italian study and hence therefore numbers and percentages of mechanisms of death other than percentage of firearm deaths could not be provided.<sup>31</sup>

There is a deficiency in retrospective homicide studies for the western Balkan region, a study from Eastern Croatia was the only homicide study discussing mechanism of death that could be sourced and no other robust current research could be located.<sup>34</sup> The 1970-1989 Eastern Croatian work was outdated and present-day scrutinizing of homicides in the western Balkan region through scholarly research articles is required to deduce whether homicides are a concern in the western Balkans.<sup>34</sup> As conveyed in Table 9 sharp force trauma was more common as a mechanism of death in eastern Croatia, this was the second most common mechanism for Kosovo, however firearm related deaths were much more frequent in Kosovo.<sup>34</sup> Comparatively these findings are of limited value because the Croatian research is from an unrelated period to the IFM data that was accumulated in Kosovo.

### **2.7.5 Cause of Death**

Few studies of homicide consider cause of death, but of the ones that do there is no standardisation and they depend on the information sourcing methods. No Kosovar cause of death data was provided by the IFM but it is suggested that follow up research would fill this gap and that these statistics could be collated alongside other homicide data.

Cause of death classification varied between research but included: head/ cranio-cerebral injury, haemorrhage and shock, thoraco-abdominal injury, asphyxia, septicaemia or miscellaneous.<sup>22,32</sup> Head/cranio-cerebral injuries appeared to be the most frequent at 22.4% of all the causes of death in Mangalore, India from 2001 to 2005, whilst shock and haemorrhage were more common at 46.34% in the Indore region within 2012.<sup>32</sup>

To evaluate cause of death several other related factors need to be considered; site of injury, the number of wounds and the post injury survival duration. The site of the injury can be the number of wounds to the head, head-neck, head-chest, head-abdomen, neck, neck-chest, chest/thorax, chest-abdomen, abdomen, back or extremities/inferior limbs.<sup>22,32</sup> Often the head, chest and abdomen are the leading causes of death by homicide<sup>22</sup>, this trend is in line with the data of Kosovo. Duration of survival depends on the study, but an example of classification is died immediately, or a survival period, for example, less than 24 hours, 1-2 days, 2-5 days or greater than 5 days.<sup>22</sup> More commonly victims pass away immediately, this was the case for 61.8% of victims in Mangalore, India.<sup>22</sup> The duration of survival is still to be addressed within homicide data collected at the IFM in Kosovo.

#### **2.7.6 Influence of Drugs and Alcohol**

Often the offender Blood Alcohol Concentration (BAC) is included in the literature. It is also crucial to know the BAC of the victim, as well as whether either party was under the influence of drugs. A study in Thailand recorded the BAC as legal, illegal and unknown, as well as whether the following drugs were present: methamphetamine, midazolam, diazepam, ephedrine, alprazolam, amphetamine, ketamine, mitragynine, morphine and

methadone.<sup>45</sup> An Italian study of toxicological findings noted the number of victims who were positive to either drugs or alcohol and then further differentiated the victims with a positive reading into the following: alcohol, alcohol and cocaine, alcohol and ecstasy, cocaine, cannabis or amphetamines.<sup>30</sup> Of the victims 36.25% were under the influence of alcohol and 60.42% of the victims with a positive reading were in this category.<sup>30</sup> However, toxicological examinations were only undertaken when mandated by law, therefore only 80 of the 251 cases were examined<sup>30</sup>. This research also neglected to study offenders and hence the toxicology of the offenders was not inspected. Wieczorek (1990) collected data on 1,887 convicted homicide offenders to discuss whether alcohol and/or drug use is related to homicide.<sup>50</sup> Approximately 50% of perpetrators were under the influence of alcohol at the time of the homicide.<sup>50</sup> Therefore, it is vital that the BAC and drug reading of offenders, as well as victims is recorded and studied. At the IFM in Kosovo it is not discerned whether victims and offenders are under the influence of alcohol and drugs and this needs to be addressed.

### **2.7.7 Seasonality and Temporal Trends**

When considering seasonality, the specific seasons of the country or region being investigated need to be well defined. Published homicide studies have found that assaults varied seasonally. However, few studies have found a seasonal variation for homicide, in fact most describe no seasonal variation.<sup>51-53</sup> Little research has used contemporaneously collected assault and time-series seasonal data from the same population. Rock (2008) was the first to consider the seasonality of assault and homicide in the same time and the conclusion was that homicide did not show any seasonal variation.<sup>54</sup>

A study conducted by Sisti (2012) reviewed the seasonality of homicides in Italy from 2003-2008.<sup>55</sup> Data was sourced nationally from the Italian Institute of Statistics (ISTAT), as well as the homicide database of the EURES.<sup>55</sup> Classification of homicide deaths was documented per the WHO's ICD: the deaths resulting from injury purposefully inflicted by another person (ICD, ninth edition codes: E960-E978; 10<sup>th</sup> edition codes: X85-Y09).<sup>9,55</sup> Spectral analysis and circular statistics based on the Rayleigh test were employed by Sisti (2012).<sup>55</sup>

A bimodal pattern in the seasonal distribution was found in Italy; summer (July and August) and winter (December and January) displayed the highest peaks over the seasons, this trend has been rarely reported.<sup>55</sup> There were also other temporal trends; most homicides occurred at night between the hours of midnight to 5:59 AM and were on either a Sunday or a Monday.<sup>55</sup> This study lacked information regarding the sex and age of victims, as well as data on alcohol consumption. Alcohol consumption during the weekend has been previously linked to higher homicide rates across the weekend.<sup>55</sup> Environmental temperature is important when considering homicide in the elderly; greater mortality and susceptibility to injury in the elderly has been found to be correlated with environmental temperature.<sup>56-57</sup> It also vital to understand the relationship of gender with temporal trends; the circumstances and mechanics have been known to differ between genders.<sup>55</sup>

The IFM in Kosovo seasonality data that was collected from 2006-2015 displayed that the incidence of homicides was roughly uniform amongst the seasons, no seasonal variation was seen, corroborating the findings of international literature. Temporal homicide

trends such as the day of the week and the time of the day are yet to be studied in Kosovo. Retrospective homicide studies should gauge not only the seasonality but also the temporal trends within a country.

### **2.7.8 Location**

The location of homicides needs to be classified firstly by geographical location, secondly whether its urban or rural and thirdly by where the even took place; house, street or alley, pub or club, open space or other. Many retrospective homicide studies focus on a specific city or region, ideally each whole country should be evaluated, along with the regions or cities. Hata (2001) outlined the regional differences in homicide patterns within five areas of Japan, comparing homicide per 100, 000 population, victim, assailant, type of trauma and homicidal motive data.<sup>58</sup> Preti (2000) also identified homicidal distribution by geographical position in regards to the latitude of the main town.<sup>31</sup> The percentage of people aged between 15 to 64 and the homicide rates of each gender were conveyed.<sup>31</sup> Studying the location of homicides in a country is needed to discern where further preventative and control measures are required. The number of homicides in a region or city within a country could also be related to the proximity of the area to allied or enemy countries. Knowledge of homicides occurring in urban or in rural areas can also identify where extra resources and efforts are required to reduce homicide counts. If firearms are highly prevalent in homicides and there are more homicides in areas where these weapons are extensive, weapon seizure enforcement may need to be escalated in either urban or rural areas.

In Brescia County, the scene of death was identified as home, open-air place, public building, car and penitentiary.<sup>30</sup> Half of the homicides committed were in a private house, 31% were in open-air places, 9% were public buildings and 8% were cars, only one case was in a penitentiary.<sup>30</sup> Understanding where homicides took place assists in comprehending the motive behind the homicides, more research data and reviews which address scene of death are required.

## **2.8 Comparing Homicide Data from Different Retrospective Years**

Most studies focus primarily on the homicide data of one country from a specific retrospective period and use ordinary least squares regression on the data, failing to quantitatively analyse the data in comparison to other sources.<sup>59</sup> Neumayer (2003) applied a fixed-effects estimator with fully robust standard errors to control for variables like time and cultural factors, allowing the pooling of homicide data from several countries with non-consistent sources.<sup>59</sup> The analysis demonstrated that the key is good policies which achieve sound economic outcomes that can in turn lower homicide rates.<sup>59</sup> This research explained how it is possible to compare retrospective homicide studies from differing years, however it is challenging and standardising the studies as well as producing more data of each year in a country would ultimately improve the accuracy of comparative homicide research.

## **3 Conclusion**

The IFM records of the number of homicides per 100,000 people in comparison to the UNODC's International Homicide Statistics database were lower overall. Differences between the UN and IFM data could be attributed to differences in the recording of

deaths and how a homicide is classified, highlighting the need for standardisation. The results of the retrospective analysis of the IFM data revealed a declining trend in the Kosovar homicide rate per 100,000 people over the ten-year period and that the most recent homicide rate in 2015 per 100,000 people of 1.6 was on par with other countries for 2015 in the region.<sup>19</sup> The highest numbers of homicides in Kosovo were recorded for the capital city of Pristina, the largest district, with the highest population. The Ferizaj and Giljan districts both had equally the lowest numbers of homicides in Kosovo. The number of homicides in Peja was high, given that Peja is the least populous district of Kosovo. The frequency of homicides each year in relation to the population of each district is still to be considered.

Crucially, the Kosovar homicide data from 2006-2015 revealed that a high number of deaths were attributed to firearms across all years, hence the laws regarding gun ownership in Kosovo were evaluated, as well as the availability and access to firearms in Kosovo. More detailed record keeping of the specific details of the type of firearms used in homicides at the IFM and how they are obtained is still needed to ascertain why the firearm frequency is so elevated, as well as further follow up studies into firearms and homicide within Kosovo.

The retrospective data also revealed that the incidence of male homicide victims was higher than for women victims of homicide, a trend seen globally, as per the global status report on homicide and international retrospective studies.<sup>19,23-31, 33,35</sup>



Most of the victims were young, being aged between 21-50 years old and the highest age group was 21-30 years of age, a finding that has also been seen internationally and in retrospective studies.<sup>19,22-23,25-26,30</sup>

The results also showed that most injuries occurred to the trunk, followed by the head and in most cases death was because of multiple wounds. Few retrospective studies addressed injuries and homicide. Most homicides occurred in the season of spring, although the homicides were almost equally distributed across the year and seasonal variation wasn't seen, a trend well documented.<sup>51-53</sup> Slightly more homicides occurred in rural villages, than in urban city residential areas, however figures were similar. The frequency of homicides in urban and rural areas for each retrospective year as a percentage of the total population each year is yet to be determined.

To facilitate the publishing of more accurate comparative homicide literature additional reputable retrospective research needs to be published. Limited studies are available and no standardisation between the studies is observed, the quality of the data depends on what is collected and available. It is proposed that within retrospective studies the following aspects of homicides be evaluated in a standardised way:

- The total number of homicides per 365-day year (January 1<sup>st</sup> – December 31<sup>st</sup>) and the population of the country, region and/or city, each year.
- The following formula should be utilised for each retrospective year to calculate the number of homicides per 100,000 people:

$$\frac{\textit{number of homicides}}{\textit{population size}} \times 100,000$$

- The number of perpetrators and victims of each gender (male, female, undefined) and the numbers per 100,000 population.
- The number of victims and perpetrators of each age group (0-10, 11-20, 21-30, 31-40, 41-50, 51-60, 61-70, 70+) and the numbers per 100,000 population.
- The percentage of victims and perpetrators of each gender and age group, in relation to the total number of victims.
- The relationship of the offender to the victim, firstly as to what percentage of all victims knew their assailant and what percentage did not. Secondly per the ACPO murder investigation manual<sup>21</sup> what percentage of all homicides are each type of homicide; domestic, homicide during other crime, gang homicide, confrontation homicide (unrelated individuals), jealousy/revenge (unrelated individuals), a reckless act (unrelated individuals), racial violence, other unspecified circumstance (unrelated individuals), unusual case or context/motive unknown.
- The percentage of all homicides and the number in relation to the mechanisms of deaths firearm, sharp force, blunt force, asphyxia and other (explosion, thermal agents, falling from heights, poisoning, neglecting, drowning, driving over, use of an axe, unknown and multiple mechanisms of death)
- The number and percentage of victims for each cause of death per WHO's ICD<sup>8</sup>, along with the location of the injury (head, head-neck, head-chest, head-abdomen, neck, neck-chest, chest/thorax, chest-abdomen, abdomen, back or extremities/inferior limbs), the number of wounds (single or multiple) and the duration of survival with the injury (died immediately, or a survival period, such as, less than 24 hours, 1-2 days, 2-5 days or greater than 5 days).

- The toxicology of both victims and offenders, this includes the BAC and screening for drugs (including: methamphetamine, midazolam, diazepam, ephedrine, alprazolam, amphetamine, ketamine, mitragynine, morphine and methadone).<sup>45</sup>
- Seasonality such as the number of homicides and percentage of all homicides for each season (Summer, Winter, Autumn and Spring), along with specific dates of what constitutes each season. Also, the number of homicides each month and monthly temperature in the country, region or city of the study.
- Temporal trends such as the time of day (00:00-05:59, 06:00-11:59, 12:00-17:59 and 18:00-23:59) and the day of the week (Monday-Sunday) when homicides are committed.
- The location of the homicides in regards to not only whether they are urban or rural (the number per 100,000 people), but also whether they took place at a house, street or alley, pub or club, open space or other and the geographic location (co-ordinates and region or city) within the country.

This review identified that standardising the reporting of homicides and accelerating the publicising of retrospective homicide studies is needed, to produce accurate and reliable global comparison.

#### **4 Recommendations for the IFM in Kosovo**

Currently the number of homicides per year is collected on an ad hoc basis at the IFM in Kosovo, it is recommended that this should be formalised and the frequencies published and converted to the number of homicides per 100,000 people, to allow international comparison. Victim gender and age data are well maintained by the IFM, although similar data for offenders would aid in the understanding of homicides in Kosovo. Further study

of the victim-offender relationship and the motive of the perpetrator is also recommended. The large percentage of firearm deaths in Kosovo also needs to be further investigated. Recording specific details of the firearms used in homicide cases (if known) could importantly assist in the reduction of firearm homicides in Kosovo. The OMPF-MEO should be recording firearms if they are located at crime scenes. Comparison of data from the IFM and the OMPF-MEO data collected at the scene would improve integrity, consistency and accuracy. It is necessary to review not only the number and location of wounds, but also the cause of death and duration of survival with the injury. This would be beneficial in recognizing homicide trends. The WHO's ICD<sup>9</sup> should be utilised by the IFM to standardise the reporting of homicide cause of death's and allow data comparison in Kosovo across different time periods. It is imperative that the toxicology data of both victims and offenders, including BAC and screening for drugs is also maintained and published. Seasonality of homicides in Kosovo is well studied, but other temporal trends like the day of the week and the time of the day could reveal further information. Finally, homicides are retrospectively studied in relation to whether they are urban or rural and the location within Kosovo, although assessing the scene of death is not yet a measure undertaken.

It is recommended that classifications and definitions of what constitutes homicide are adopted within Kosovo. The United Kingdom ACPO Murder Investigation Manual<sup>21</sup> does provide examples of classifications of types of homicide, as well as the grouping of homicide into murder, manslaughter and infanticide. The definition of intentional homicide has already been provided within the UNODC's International Homicide

database<sup>12</sup>, adopting this definition when classifying homicides will provide crucial standardisation.

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**PART TWO**

MANUSCRIPT

A RETROSPECTIVE COMPARATIVE STUDY OF HOMICIDE DEATHS IN KOSOVO  
FROM 2006-2015

# A RETROSPECTIVE COMPARATIVE STUDY OF HOMICIDE DEATHS IN KOSOVO FROM 2006-2015

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## ABSTRACT

The ability to conduct accurate retrospective homicide comparative research is reliant on the publishing of robust studies that assess the specifics of homicides in a standardised manner. To address these matters at the Institute of Forensic Medicine (IFM) in Pristina, Kosovo, which is responsible for the recording of all known homicide deaths in the country, the IFM homicide data of the years 2006-2015 was retrospectively studied. Findings indicate that firearms were consistently used in 73.76% of all homicides committed and more specific documentation on the types of firearms used is required to reduce the availability of these weapons and ultimately the number of homicides. It appears that there is a downward trend in the number of homicide deaths in Kosovo per 100,000 people, however no standardisation method is utilised to record homicides in Kosovo. Consequently, this study aims to compare global homicide trends relative to the retrospective homicide data from Kosovo, to inform and address the need for prevention programmes and to establish standardised recording of homicides in Kosovo. Recommendations to develop the documentation of homicides in Kosovo will also be discussed.

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**KEY WORDS:** Comparative, Firearms, Homicide, Institute of Forensic Medicine, Kosovo, Retrospective, Standardisation.



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## **LIST OF ABBREVIATIONS**

<b>CPC</b>	Criminal Procedure Code
<b>ICD</b>	International Classification of Diseases
<b>IFM</b>	Institute of Forensic Medicine
<b>OMPF-MEO</b>	Office on Missing Persons and Forensics “Medical Examiner’s Office”
<b>UNODC</b>	United Nations Office on Drugs and Crime
<b>WHO</b>	World Health Organisation

## 1 Introduction

The Institute of Forensic Medicine (IFM) in the capital city of Pristina in Kosovo performs post-mortem's, biological examinations, other medico-legal examinations and documents all the deaths within the country.<sup>1</sup> Details of homicides recorded at the IFM are as follows: the number of homicide cases in Kosovo each year, the number of homicides in each region of Kosovo, the gender and age of victims, seasonality, whether the scene of death is urban or rural, wound numbers and where they are inflicted, as well as the frequency of homicides in each specific district of Kosovo. Within the IFM, the Office on Missing Persons and Forensics "Medical Examiner's Office" (OMPF-MEO) also documents homicides, but only in the instances where crime scene attendance is required and executed.

An effective criminal justice system achieves justice for victims of homicide, ensures thorough investigation and a fair trial of suspected homicide offenders, whilst upholding the rule of law.<sup>2</sup> The Criminal Procedure Code (CPC) (Criminal No. 04/L-123) reformed the Kosovo justice system from an inquisitorial to an adversarial system in 2013.<sup>3</sup> Within this CPC there are no articles pertaining to the recording of homicides and the upkeep of these details that are critical to the pursuit of justice. In 2016 the 'Kosovo Law on Forensic Medicine' (Law No. 05/L-060) was ratified to regulate the IFM and the medico-legal examinations performed, which includes cases of homicide or suspicious homicide.<sup>4</sup> Like the CPC, there are also no details within the 'Kosovo Law on Forensic Medicine' that refer to the documentation and recording of homicides at the IFM. There are homicide reporting guidelines available that aren't yet utilised in Kosovo; The World Health

Organisation (WHO) has produced the standardised International Classification of Diseases (ICD) and medical certificates.<sup>5</sup>

### **Research Aims**

The first aim of this study is to publish the retrospective Kosovar homicide data for the post-conflict period of 2006-2015 and in doing so to assess homicide rates, identify any trends and ultimately prevent and decrease the number of homicides within Kosovo.

There are no standardised measures in place for the documentation of deaths by homicide in Kosovo. Therefore, this research also aims to compare the global estimates of homicide deaths to the Kosovar homicide data, to decipher a standardised method of recording homicides in Kosovo. Additionally, this study produced recommendations for the IFM in Kosovo to assist in the standardisation of homicide death recordings within the country. Critically reviewing the available published retrospective homicide literature highlighted the void in reputable data, therefore this study focused more so on a comparison of global UNODC and World Bank estimates within reports to the homicide data from the IFM.

## **2 Discussion**

This discussion section will compare the IFM homicide data with global estimations of homicide rates. A standard method of reporting the gender, sex and age of victims, as well as offenders, mechanism of death, cause of death, seasonality and drug and alcohol influence will be discussed. Additionally, this section will provide recommendations to the IFM in Kosovo to enhance and standardise documentation of homicides within Kosovo.

These recommendations will not only aid Kosovo but also inform other countries internationally, in the standardisation of homicide figures.

## 2.1 The Number of Homicides in Kosovo from 2006-2015

In reviewing the global perspective on homicide rates, the UN Office on Drugs and Crime (UNODC) undertook a 'Global Study on Homicide 2013' and estimated the total number of homicides by region (Figure 1).<sup>2</sup> Globally there was a disparity in homicide rates found; in general Africa and the Americas exhibit homicide rates far above Asia, Europe, Oceania and the globe.<sup>2</sup> However, this finding is not a new phenomenon, studies have cited well the high homicide rates in Africa and the Americas.<sup>6-8</sup> The number of homicides in Kosovo per 100,000 people for 2012 was included in this study and its rate was on par with the lower rates of homicides observed in Asia and Oceania, it is also on trend with the low rate recorded for the rest of Europe.<sup>2</sup>

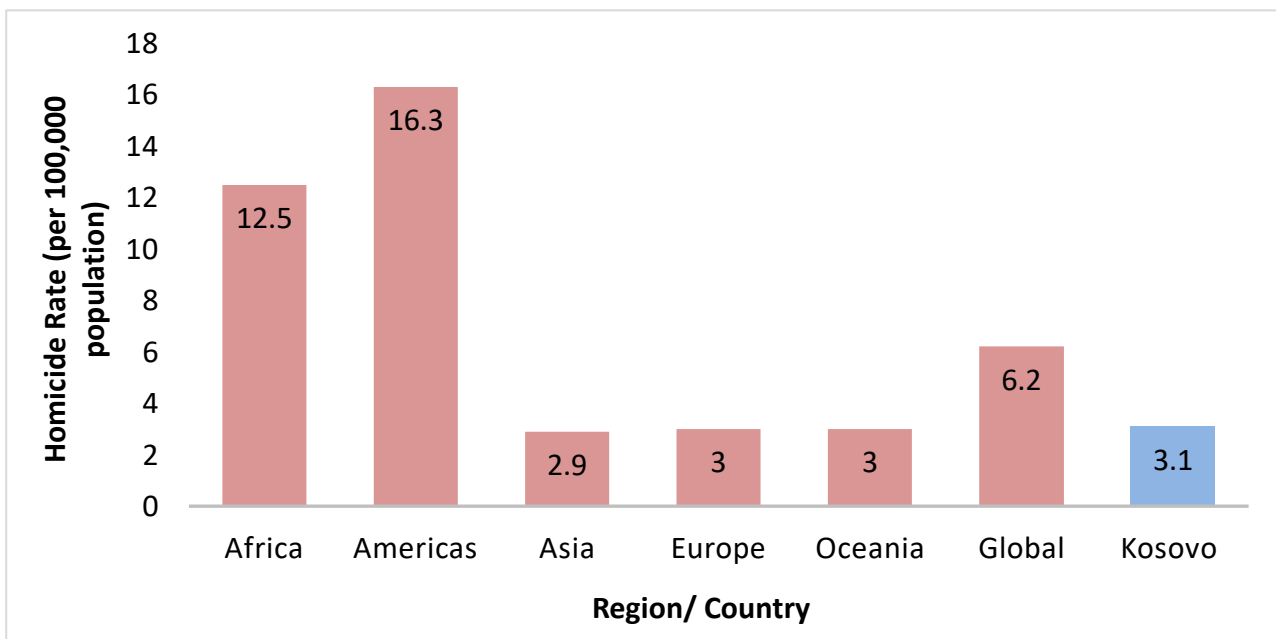


Figure 1: Adapted from the 'Global Study on Homicide 2013' the number of homicides (2012 or latest year available prior to 2012) per 100,000 population in each region compared to Kosovo in 2012.<sup>2</sup>

In 2012 the homicide rate for Kosovo was 4.9 per 100,000 people, this was high compared to the other countries in the Balkan region for this year. In the year 2012, as per the UNODC's data, the homicide rate of Albania was 5.38, Bosnia and Herzegovina was 1.73, Croatia was 1.12, Montenegro was 2.71, Serbia was 1.124, and Macedonia was 1.40.<sup>9</sup> As conveyed in Figure 2, the World Bank evaluation of the UNODC's intentional homicide data and the IFM homicide data demonstrated a general downward trend.<sup>9</sup> The World Bank data in contrast to the data from the IFM was higher overall, however the two sources appear to diverge from 2013-2015. A paired samples t-test was conducted to compare the number of homicides documented by the IFM and the numbers estimated by the World Bank. Data from the World Bank was not available for 2006-2007 and hence these years were not included in the analysis. From 2008-2015, there was a significant difference in the number of homicides per 100,000 population recorded by the IFM (M=2.6, SD=0.74) and the intentional number of homicides estimated by the World Bank (M=3.8, SD=1.78);  $t(7) = -2.76, p < 0.05$ .

The inconsistencies between the World Bank and the IFM data may have been the result of differences in data collection and the definition of homicide utilised. Therefore, it is crucial that homicide is defined and the number of homicides within Kosovo is recorded with accuracy and precision. The 'Global Study on Homicide 2013' defines intentional homicide as "the unlawful death purposefully inflicted on a person by another person".<sup>2</sup> This definition should be adopted in Kosovo to provide necessary standardisation and improve international comparison with Kosovo. To identify why certain years of Kosovo exhibit higher frequencies of homicides per 100,000 population is problematic because yearly crime rate and weaponry data is not published in Kosovo. From 2006 to 2015 the

population of Kosovo gradually increased yearly from 1,719,536 to 1,801,800 inhabitants, as documented in the 2011 census.<sup>10</sup> However, the number of homicides each year was more erratic and fluctuations were displayed in Figure 2.<sup>9</sup>

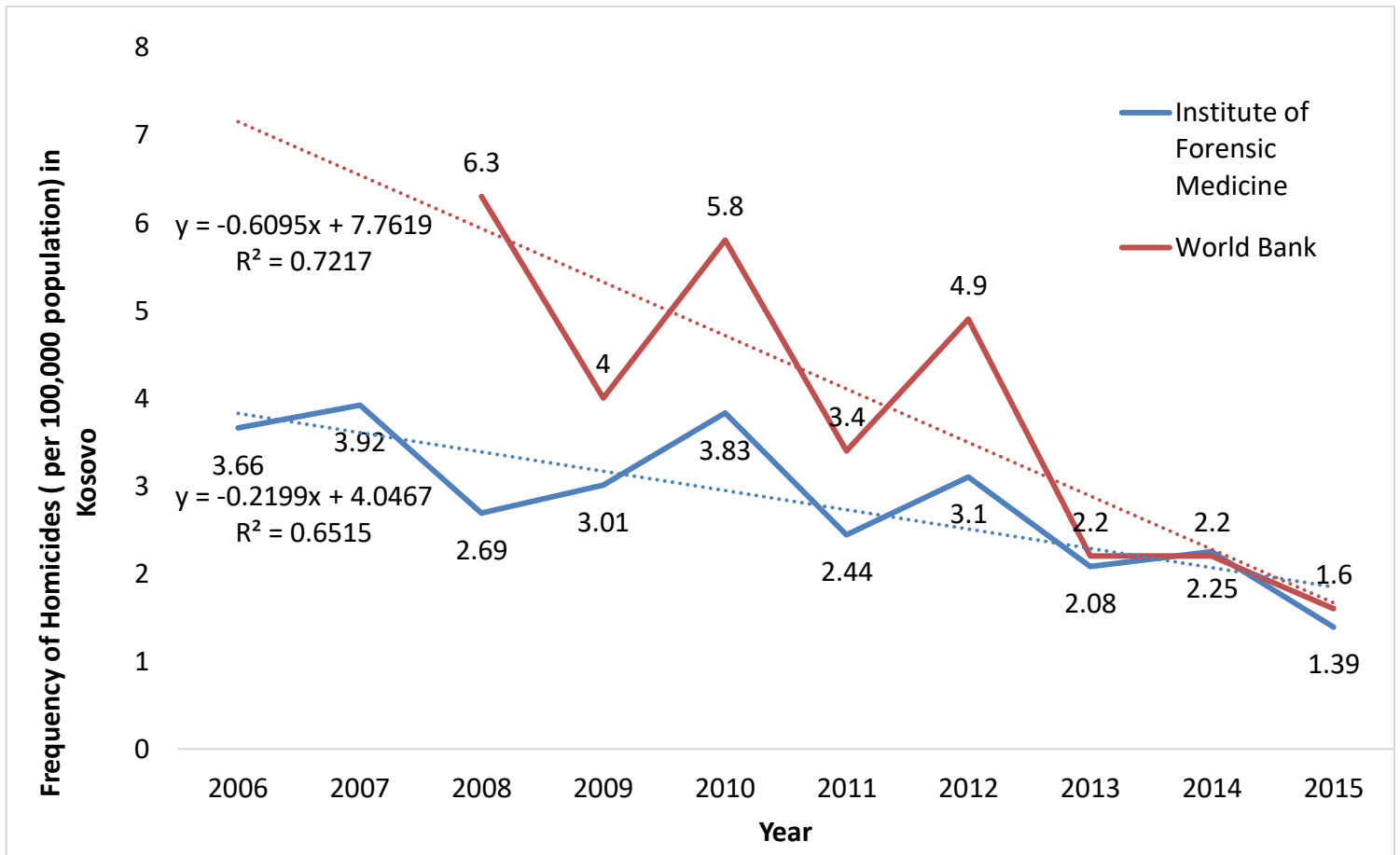


Figure 2: The IFM records of the frequency (per 100,000 population) of homicides per year in Kosovo from 2006-2015 in comparison to the World Bank intentional homicide rates (per 100,000 population) from 2008-2015 in Kosovo. Note that World Bank data was not present for 2006-2007.<sup>9</sup>

## 2.2 Kosovo Regional Trends Data

Figure 3 displays a comparison of the number of homicides in each of the seven districts (Ferizaj, Gjakova, Gjilan, Mitrovica, Peja, Pristina and Prizren) of Kosovo throughout the years of this study. Albania, the Republic of Macedonia and Montenegro and Serbia



borders the northern and eastern districts of Kosovo.<sup>11</sup> Of the 503 homicides recorded in Kosovo from 2006-2015, 69.8% were within the districts of Gjiilan, Mitrovica, Peja and Pristina. Notably, at 25% of all homicides, the highest number of all homicides were for the district of Pristina, as shown in Figure 3. The 2011 census found that the total population of the district of Pristina was 477,312, making it the most populous district of Kosovo, with the highest number of homicides.<sup>10</sup> Not far behind the figure for the district of Pristina, was the district of Peja, at 22% of all homicides committed from 2006-2015. No explanation could be devised to account for the high numbers of homicide in relation to the small population size of Peja, more research is needed into the crime rates of each district of Kosovo. Furthermore, the population of each district of Kosovo each year should be recorded, so that it can be related to the number of homicides and consequently the number of homicides per 100,000 people in each district of Kosovo can be formulated.

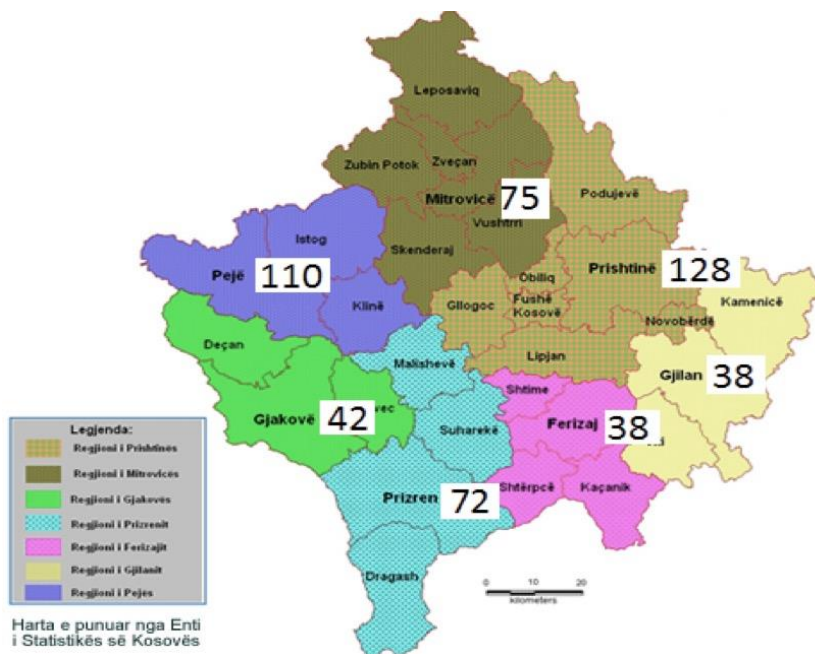


Figure 3: IFM recordings from 2006-2015 of the number of homicides in each of the following seven districts of Kosovo: Ferizaj, Gjakova, Gjiilan, Mitrovica, Peja, Pristina and Prizren.

In the latest 2011 census, it was estimated that 38% of the population in Kosovo were living in urban city areas and 62% were in rural country areas.<sup>10</sup> The findings of the 2003 study of the small arms and light weapons showed that guns ownership was higher in rural areas.<sup>12</sup> Therefore, it would be expected that a higher percentage of homicides in Kosovo would be in rural country areas of Kosovo from 2006-2015, this was the case, however the distribution was very similar with 52.5% of homicides being rural and 47.5% being urban. Follow up studies are required to determine why homicides appear to be evenly distributed between rural and urban areas, a better definition of the classifications used for each area is also important.

### **2.3 Seasonal Homicide Trends within Kosovo**

No publications were found that studied the seasonality of homicides in Kosovo and little data was available to understand the average temperature and rainfall during the seasons, some data is made available online from World Bank.<sup>13</sup> The data in Figure 4 shows that from 1991-2005 during the summer of Kosovo the temperature peaked to an average of 20 (°C) and the average rainfall was lowest in August at 53.5mm and within the winter the temperature dropped to an average of -1.1 (°C).<sup>13</sup> The average rainfall was highest at 84.7 mm during the transition between Summer and Autumn.<sup>13</sup>

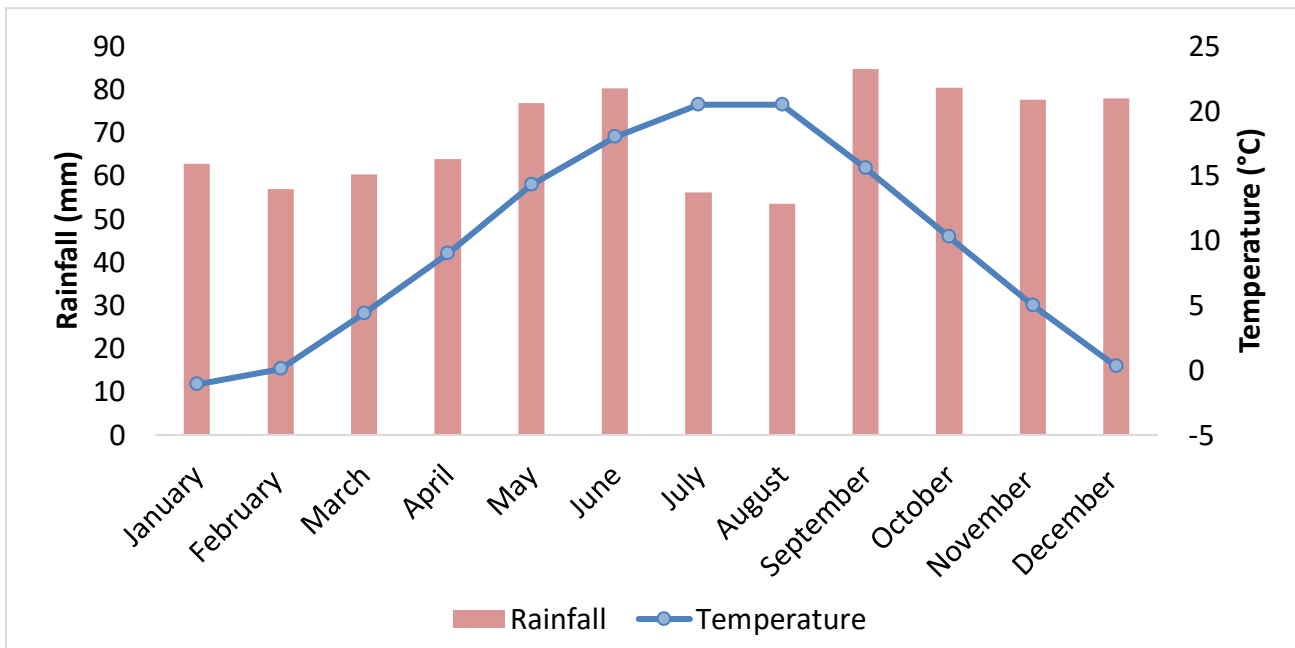


Figure 4: The average temperature (°C) and rainfall (mm) within Kosovo from 1991-2015.<sup>13</sup>

The average temperature and rainfall within Kosovo from 1991-2015 cannot however be effectively compared to the percentage of homicides for each season from 2006-2015 in Figure 5, firstly because the years 1991-2005 were not encompassed within this study and secondly because the seasons recorded begin part way through the months.<sup>13</sup> Limited variation amongst the seasons with the number of homicides recorded is reported in international literature.<sup>14-16</sup> There appears to be no seasonal variation in Kosovo, however to facilitate the comparison of the number of homicides in each season with climate, average temperature and rainfall need to be collected and published seasonally as well as monthly. Other temporal trends related to seasonality such as the day of the week and the time of the day that homicides are committed are also important to identify trends and need to be studied.<sup>17</sup>

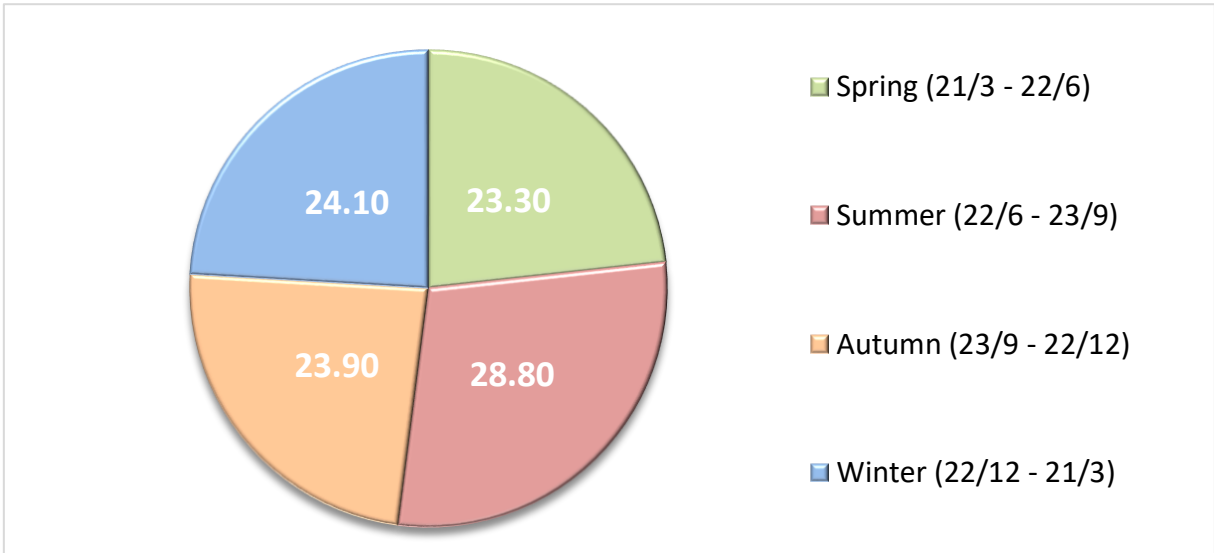


Figure 5: IFM recordings of the number and percentage of all homicides in Kosovo from 2006-2015 in spring (21/3 – 22/6), summer (22/6 – 23/9), autumn (23/9 – 22/12) and winter (22/12 – 21/3).

#### 2.4 Mechanism of Death within Homicides in Kosovo

Comparison of the mechanism of homicide deaths in Kosovo from 2006-2015 to the 2013 UNODC global study on homicide are documented in Figure 6. The percentage of deaths related to firearms were significantly higher than Africa, Asia, Europe, Oceania and higher than the America's, where approximately two thirds of homicides were committed with guns.<sup>2</sup> Reducing the number and availability of firearms in Kosovo potentially could drop the homicide rate of Kosovo even further.

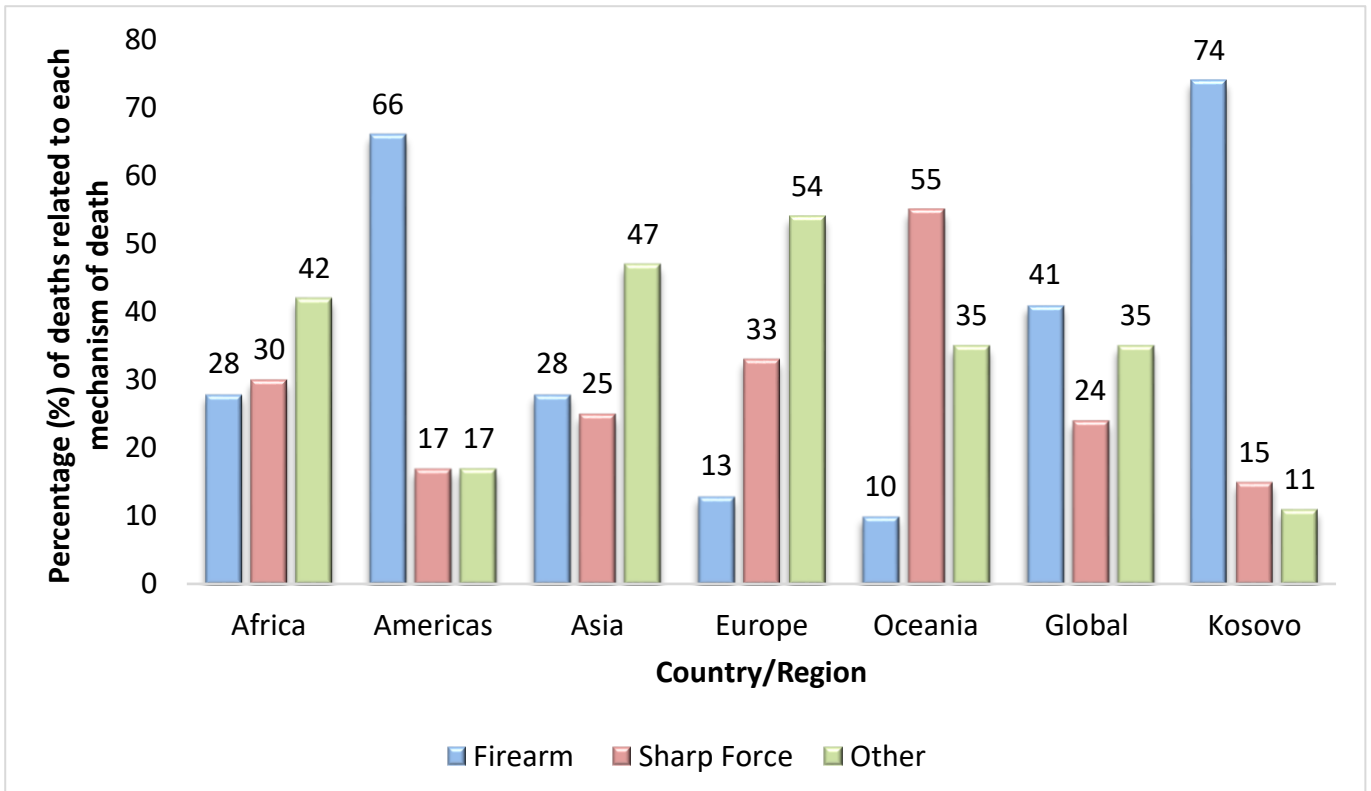


Figure 6: A comparison between the percentage of 2006-2015 deaths for each mechanism of death in Kosovo, as recorded by the IFM, to the 2013 UNODC global mechanism of death homicide data.<sup>2</sup>

During the Balkan wars of the 1990's a rapid influx of small arms and light weapons and an increase in production of weapons made in Yugoslavia occurred in the region.<sup>18</sup> Grillot (2010) found that weapon policies were developed in the region, however the implementation of these policies was limited.<sup>18</sup> The 2003 small arms survey of the Western Balkan countries estimated that approximately 400,000 small arms were available in Kosovo and of these only 34,000 were legally owned by civilians and 45,000 were held by official security forces.<sup>12,18</sup> Therefore, more than 300,000 small arms were illegally owned and not registered within the country of Kosovo.<sup>12,18</sup>

As of present there are laws on the possession of weapons within Kosovo. Law No. 05/L - 022 on weapons was enacted in 2015 and it regulates the possession of firearms and the consent required.<sup>19</sup> Within article 144 of the CPC of Kosovo it is states that persons sending or carrying weapons into or out of the Republic of Kosovo shall be punished by imprisonment for five to fifteen years.<sup>19</sup> The 'Customs and Excise Code of Kosovo' (Law 2008/03-L-109) was also passed in 2008 and it states that those who don't declare weapons, ammunition or explosions through customs face fines between 5000 and 10,000 Euro.<sup>20</sup> It appears that the firearm problem in Kosovo is not due to an absence of effective legislation, it is more likely a result of ineffective implementation of the CPC and the laws surrounding in Kosovo.<sup>18</sup>

## **2.5 A Review of the Wounds Inflicted during Homicides in Kosovo**

Figure 7 relays the percentage of all homicides for each body region of the wounds inflicted during the homicides in Kosovo from 2006-2015. Almost half of all wounds occurred to the trunk, 15.70% were to the head and 13.5% were to the head and trunk. Of these wounds 35% were single, 62.2% were multiple and 2.8% were other (asphyxia and drowning or explosion). Karlsson (1998) found that most sharp force wounds are single and clustered around the head, upper extremities and chest.<sup>21</sup> Whereas Purdue (2000) discovered that in firearm and blunt force trauma wounds are often seen to the head.<sup>22</sup> Almost three quarters of the homicide deaths in Kosovo were firearm, hence it was expected that most wounds would be to the head, this was not the case, the trunk was much more common. To better determine the relationship between mechanism of death and the body region of the wound/s further information such as the specific body region of each of the firearm, sharp force and blunt force wound/s is required.

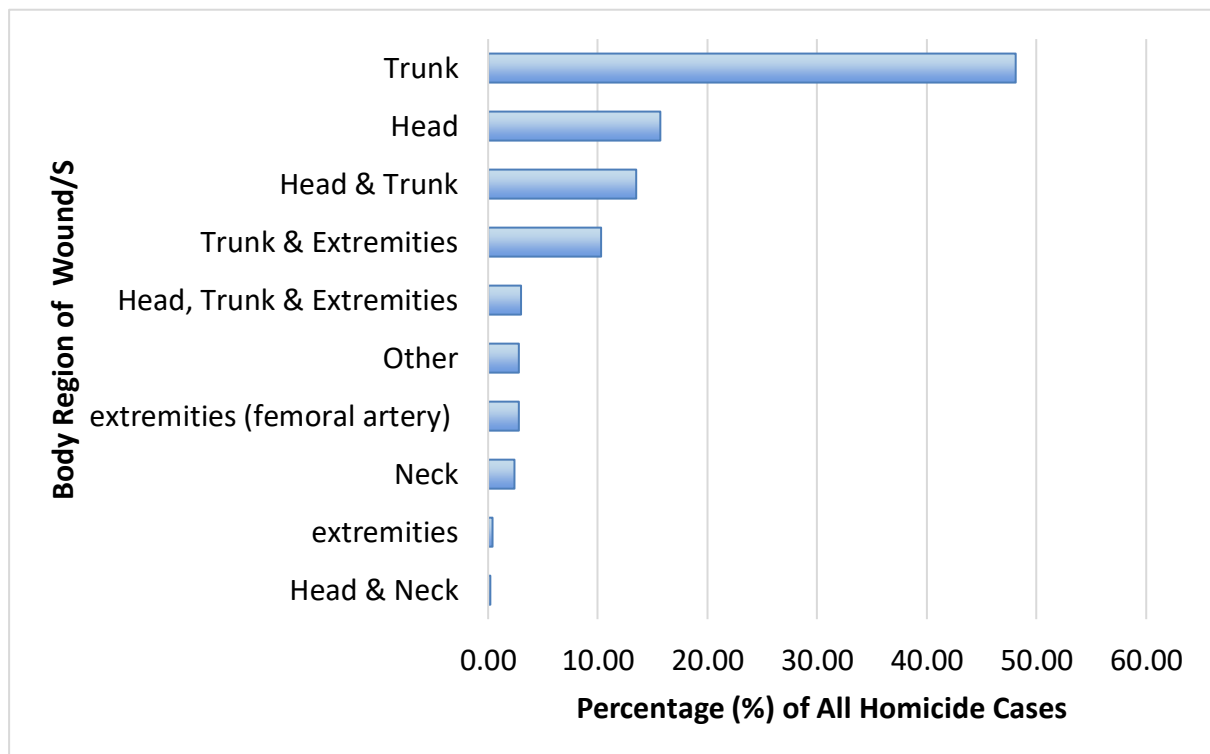


Figure 7: The percentage of wounds in regards to body region in homicides within Kosovo from 2006-2015, as recorded by the IFM.

## 2.6 Victim Gender and Age within Kosovo

Globally it was estimated in the 2013 ‘Global Study on Homicide’ that 79% of all homicide victims are male and that the rate per 100,000 population is 9.7.<sup>2</sup> A global rate of only 2.7 per 100,000 population was shown for females.<sup>2</sup> Africa and the Americas both share male homicide rates far above global averages consecutively at 19 and 29.3 per 100,000 population.<sup>2</sup> Within Kosovo 87% of the victims from 2006-2015 were male and 13% were female, as found by data sourced from the IFM in Table 1. The retrospective findings of Kosovo corroborate the dominance of male homicide victims found in the 2013 ‘Global Study on Homicide’, as well as retrospective homicide studies.<sup>2,23-30</sup> It was not possible to compare directly the age and gender of victims in Kosovo from 2006-2015 with the UNODC global report of homicide due to the lack of Kosovar homicide data. Therefore,

the IFM needs to record the number of homicides in Kosovo for males, females and the age brackets 0-10, 11-20, 21-30, 31-40, 41-50 and  $\geq 50$  to rates per 100,000 population, to allow for meaningful comparisons and evaluation.

Table 1: Victim Gender and Age for homicides within Kosovo from 2006-2015.

Demographics	Frequency	Percentage
<b>Victim Gender</b>		
Male	438	87.10
Female	65	12.90
<b>Victim Age</b>		
0-10	5	1.00
11-20	57	11.30
21-30	133	26.40
31-40	102	20.30
41-50	97	19.30
$\geq 50$	109	21.70

Contrasting the age of homicide victims within global reports and Kosovo was unsuitable because the recorded age of victims within Kosovo was purely numbers and percentages of all victims. Within the 'Global Study on Homicide' for Europe the mode victim age group was 30-44 for both males and females; a rate of 6.4 males and 1.9 females per 100,000 population was displayed.<sup>2</sup> Data from the IFM conveyed that the mode victim age group was 21-30, which was slightly younger than estimates for 2012 within Europe.<sup>2</sup> Converting the victim age groups for Kosovo to figures per 100,000 population would allow a more accurate comparative study. It's important also to note that the data from the 2013 'Global Study on Homicide' was for the year 2012, however if data wasn't



available for this year at the time of the study, the latest year needed to be used, emphasising the lack of availability of homicide data.<sup>2</sup>

## **2.7 A Standardised Method for Publishing Homicide Research**

Critically reviewing the available homicide literature and reports, as well as comparing data from the IFM to these sources, highlighted the need for standardisation. The quality of UNODC and WHO homicide studies and reports are of a high standard, although few published journal articles employ these sources as a guideline. To standardise the recording of homicides, it is recommended that the following are addressed within reports and retrospective homicide studies: the number of homicides, seasonality, temporal trends, location, offender and victim gender and age data, homicide classifications, mechanism of death, cause of death and toxicology of victims and perpetrators.

Within retrospective studies and reports, a year should be defined as a 365-day calendar year from January 1<sup>st</sup> to December 31<sup>st</sup> and the specific time of the research should be recorded. For each year within the specific country, region and/or city the number of homicides and the number per 100,000 people needs to be assessed. Location needs to be evaluated in terms of the specific geographic location (co-ordinates and region or city), whether homicides are urban or rural (the number per 100,000) and the scene of death (house, street or alley, pub or club, open space or other). Seasonality of the country, city and/or region of the research should identify the number of homicides and percentage of all homicides for each season (Summer, Winter, Autumn and Spring), along with specific dates of what constitutes each season and the monthly average temperature and rainfall

in the country, region and/or city of the research. Other temporal trends including the time of the day (00:00-05:59, 06:00-11:59, 12:00-17:59 and 18:00-23:59) and the day of the week (Monday-Sunday) that homicides occur should also be studied to identify trends.

The gender (male, female, undefined) and age (0-10, 11-20, 21-30, 31-40, 41-50, 51-60, 61-70, 70+) of offenders and victims should be compared and stated as numbers and/or percentages of all deaths within the time of the research. Victim offender relationships also require discussion, in regards to the percentage of victim-assailants who knew each other and the type of homicide committed per the ACPO 'Murder Investigation Manual'; domestic, homicide during other crime, gang homicide, confrontation homicide (unrelated individuals), jealousy/vengeance (unrelated individuals), a reckless act (unrelated individuals), racial violence, other unspecified circumstance (unrelated individuals), unusual case or context/motive unknown.<sup>31</sup> Toxicological data of victims and offenders needs to be collected and reported, this includes BAC and drugs such as: methamphetamine, midazolam, diazepam, ephedrine, alprazolam, amphetamine, ketamine, mitragynine, morphine and methadone.<sup>32</sup>

Data specific to the victim should include mechanism of death, cause of death, location of injury, the number of wounds and the duration of survival with the injury. Specific categories for mechanism of death should be defined, these are: firearm, sharp force, blunt force, asphyxia and other (explosion, thermal agents, falling from heights, poisoning, neglecting, drowning, driving over, use of an axe, unknown and multiple mechanisms of death). The WHO's ICD should be employed to standardise the

classification of cause of death.<sup>5</sup> Along with the cause of death, the location of the injury (head, head-neck, head-chest, head-abdomen, neck, neck-chest, chest/thorax, chest-abdomen, abdomen, back or extremities/inferior limbs), the number of wounds inflicted (single or multiple) and the duration of survival with the injury (died immediately, or a survival period, such as, less than 24 hours, 1-2 days, 2-5 days or greater than 5 days) must be relayed.

If future research studies adopt this standardised method of publishing research, comparison between regions and countries will be feasible and more accurate. A significant increase in the number and quality of homicide studies is also needed to facilitate this accurate comparison. This data will support Kosovo in developing preventative measures in reducing its homicide rates.

### **3 Conclusion**

Significant differences were exhibited between the IFM records of the number of homicides per 100,000 population and the World Bank intentional homicide rates per 100,000 population from 2008-2015 in Kosovo, emphasising the need for standardisation of homicides within Kosovo.<sup>9</sup> Within the CPC of Kosovo (Criminal No. 04/L-123) and the Kosovo Law on Forensic Medicine (Law No. 05/L-060) there are no laws that are specific to the recording and documentation of homicides by the IFM.<sup>3,4</sup> Therefore, it is recommended that both the code and law are reviewed and specific sections are allocated to the recording and maintenance of homicide casework within the appropriate legislation.

Studying the homicide figures for 2006-2015 identified that homicide rates have decreased within Kosovo since 2006. For the year 2012 specifically homicide was less common in Kosovo compared to other regions in the world, including Africa and the Americas.<sup>2,6-8</sup> It appears that although the homicide rate is low in Kosovo, the issue of firearm misuse is high in homicides; in comparison to the 2013 UNODC homicide data for homicides by each region of the world, the Kosovo firearm rate was higher than all the regions, including the America's.<sup>2</sup> The access to, availability of firearms and proper implementation of the codes and laws surrounding small arms and weapons is pivotal to continuation of reduction of the number of homicides in Kosovo.

Within Kosovo from 2006-2015 the most homicides were recorded for the district of Pristina, followed by Peja and the homicides were almost evenly spread across urban city areas and rural country areas. Collecting data of the population of each district in Kosovo yearly and the specific geographic and definitions of urban and rural would assist in recognizing geographic homicide trends. Seasonal homicide variation was not found in Kosovo, although to better identify seasonal homicide trends within Kosovo the average temperature and rainfall need to be collected and published seasonally. Other temporal data such as the day of the week and the time of the day that homicides are committed is also useful for discovering temporal trends. In terms of victimology, it would be more desirable to know the number of homicide victims and their age in relation to the numbers per 100,000 population for international comparison. The research was however able to confirm the international finding that victims of homicide are more often male, within Kosovo.<sup>2, 23-30</sup>

## 4 Recommendations for the IFM in Kosovo

It is recommended that from the standardised method established the following additional specifics are recorded to add to the data already recorded by the IFM yearly:

1. The number of homicides per 100,000 population and the number per 100,000 people in each district of Kosovo.
2. Victim and perpetrator gender and age per 100,000 population.
3. Offender-victim relationship in regards to the ACPO classifications of homicides and the motivation of the homicide.<sup>31</sup>
4. The number and percentage of all victims of each cause of death stated in the WHO's International Classification of Diseases (ICD) .<sup>5</sup>
5. Blood alcohol concentration (BAC) and drug screening of victims and offenders.
6. The geographic location of homicides, whether they are urban or rural and where they took place; house, street or alley, pub or club, open space or other.
7. Temporal homicide data such as day of the week and time of the day that homicides occur.

A standard definition of homicide should also be cited within Kosovo to aid international comparison and this can be sourced as the intentional homicide definition from the UNODC's International homicide database.<sup>2,9</sup> Further research and analysis of homicide rates from 2015 to present should be conducted within Kosovo and the details of recent homicides should be preserved in the formalised manner. This research only studied the post-conflict period of 2006-2015, a comparison of these retrospective years to the period of conflict would be useful to determine the impact of the Kosovo war on homicide counts and how the country is faring since the 1999 Kosovo War.

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