An Analytical Study of Homicides in and Around Kurnool, Andhra Pradesh.

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Abstract:
The pattern of homicidal deaths differs widely from place to place. The present study was carried out at the Institute of Forensic Medicine, Kurnool Medical College, Kurnool, India, during the period of Nov 2016 and Oct 2021. The study was done to assess the regional pattern of homicides in and around Kurnool, one of the major districts in Andhra Pradesh, India. During this study period, 50 cases of homicidal deaths were subjected to autopsy. Most of the cases were in the age group of 30-39 yrs, followed by 20-29 years. The peak incidence was found in the age group of 31-40 yrs. 76% are Males in the current study among 50 cases. The majority of the cases were married and belonged to the Hindu religion. 76% of the cases were planned before. Lacerations and contusions were found to be more common types of injuries. In most of the cases, vital organs like the brain are involved. Most of the deaths occurred in the hospital. The scene of the crime was not examined in any of the case. Death was witnessed by someone in majority of the cases. Most of the homicides occurred during the evening time. An autopsy was done at the Mortuary for all the cases.
Keywords: *Homicide, Autopsy, Vital organs, Lacerations, Contusions*

I. Introduction:

Homicide represents a major global health burden, but geographical differences in homicide rates require an appropriate analysis.

The world health organization defined homicide as "The killing of a person by another with intent to cause death or serious injury[1]" which is a heinous crime. As per the world health organization's statistics of 2019, 3.79 is the estimation of rates of Homicide per 1, 00, 000 persons in India, including both genders [2]. These constitute a significant global health burden. It also affects the psychosocial wellbeing of communities and individuals worldwide, apart from the enormous economic losses.

As per Global Burden of Armed Violence Report, 2011 [3], the average annual global violent death rate between 2004 and 2009 was 79 per million.

There is a well-documented correlation between socioeconomic deprivation, geography, and Homicide. Gender and age also play a vital role in Homicide. Geographical analyses can provide a valuable means for visualizing and examining homicide trends and patterns to inform and support appropriate upstream policy responses in affected areas.

The common pathways leading to homicide may vary between male and female victims[4]. Male homicide more commonly exhibits associations with other forms of criminality, and female homicides are mostly linked to familial- and intimate-partner violence.

Knowing the distribution of homicides across one particular area presents an important for future policy evaluation. The understanding of geographical areas could help public officials to implement various effective methods to prevent this violence.

Homicide patterns are a valuable indicator of social stress in a community, and they provide law-enforcement authorities with helpful information.

Though various studies were done in relation to homicide in different parts of India[5, 6, 7, 8,] none have been done in Kurnool, Andhra Pradesh.
So, we have undertaken this study to identify the pattern in our locality.

II. Materials & Methods:

Place and duration of study:
This study was carried out over five years, starting from 1st November 2016 to 31st October 2021 in the Department of Forensic Medicine and Toxicology, at Kurnool Medical College, Kurnool, Andhra Pradesh.

Type of the study and sample size:
This is a prospective, cross-section study.
Being the referral center, it receives cadavers from in and around the Kurnool district comprising a population of 40 lakhs approximately. Out of the 6000 medico-legal autopsies conducted during the period mentioned above, a total of 50 homicidal cases were considered.

Exclusion criteria:
Unnatural deaths -The cause of death could not be known due to insufficient history, gross decomposition were excluded from the study.
After obtaining informed consent in the local language from the subject's relatives, the history and sociological aspects of the deceased were taken from relatives accompanied in a proforma.
Emphasis was given on the presence of any mechanical injury causing death, signs of struggle or defense wounds.
Calculations were done using SPSS software and in Microsoft excel. Results were expressed as frequency or percentage.
The study was conducted after getting approval from the institutional ethics committee attached to Kurnool Medical College, Kurnool.

III.   Results:

Demographic features:
Most of the patients belonged to the age group 30-39 years. 1 patient is aged 5 months and 1 patient is aged 4 years in this study.

Table 1: Age group of Homicide Cases

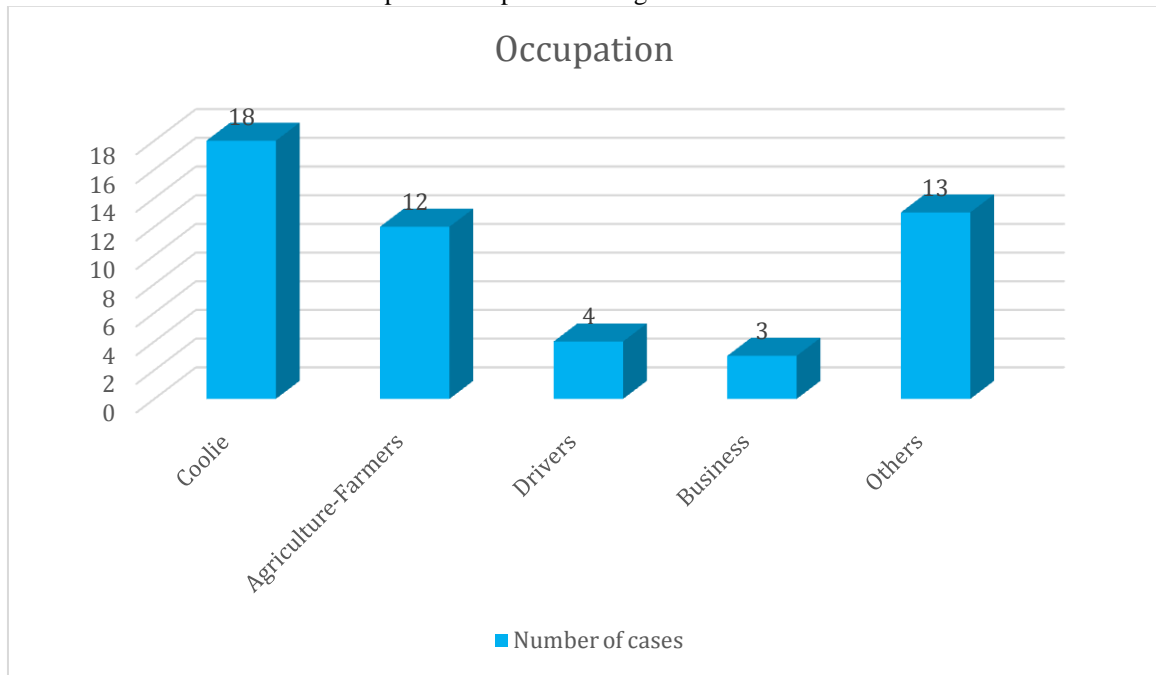| Age group	Number of Cases	Percentage
Below 1 year	1	2%
1-19 years	1	2%
20-29 years	11	22%
30-39 years	18	36%
40-49 years	8	16%
50-59 years	9	18%
Above 60 years	2	4%

Graph 1: Gender distribution of cases
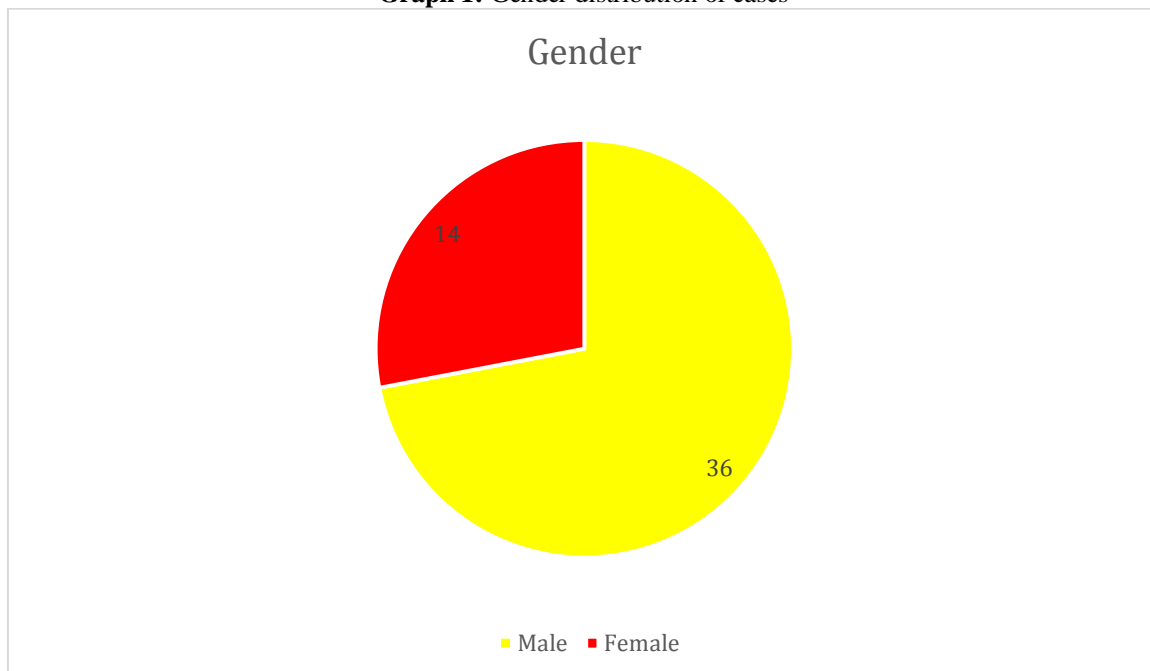
36 subjects were males in the current study.
The majority of the cases were married (88%) and belonged to the Hindu religion (96%).
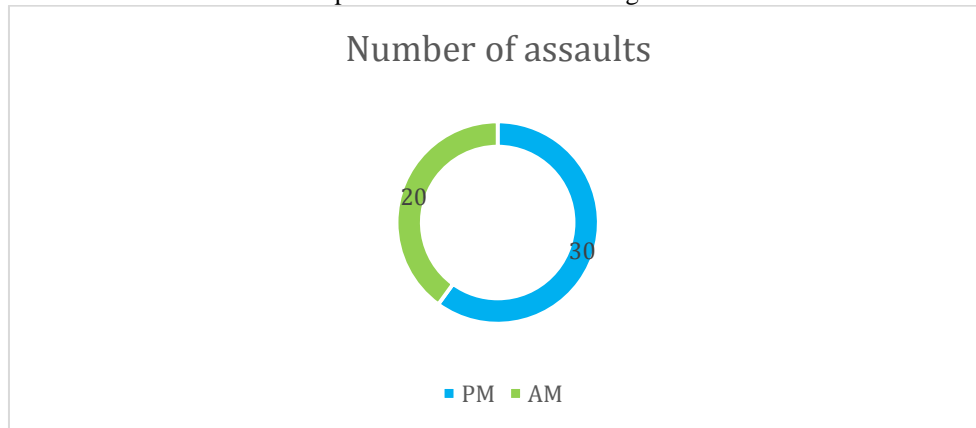
Graph 2: Occupation among homicide cases:

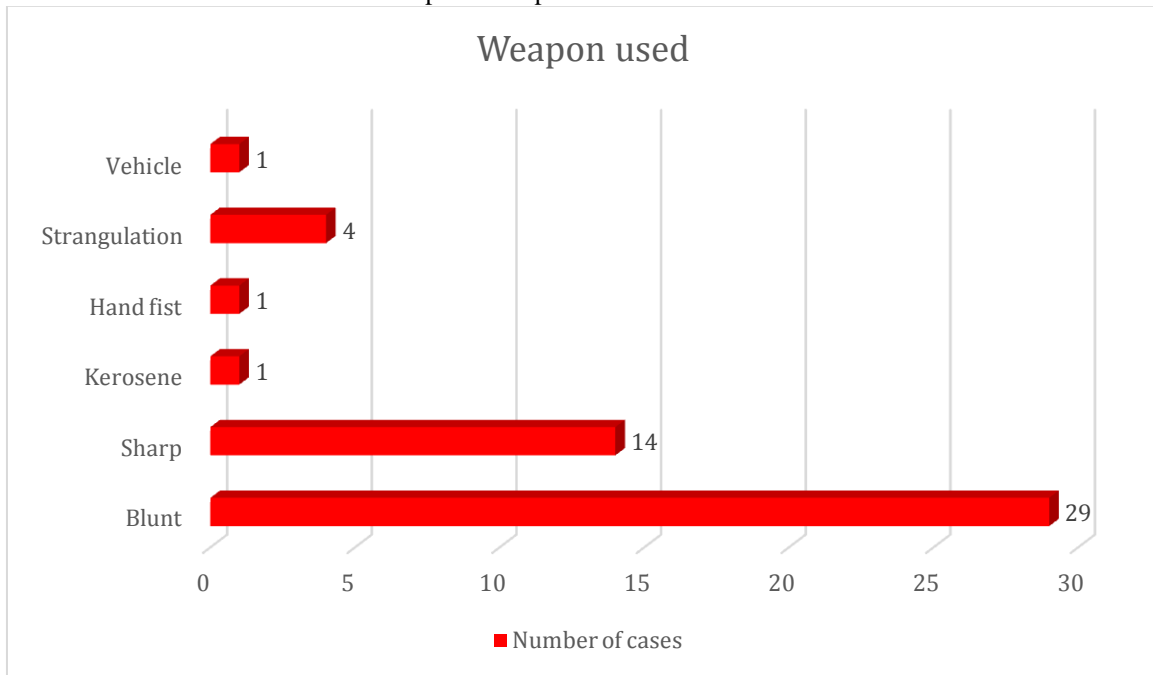Most of the cases are coolies by occupation.
Time of assault:

Graph 2: Time of assault among cases

Most of the assaults happened during evening time and midnight.
38 assaults are planned ahead of homicide and 12 were not planned in the current study.

Graph 3: Weapon used for homicide:

Type of injury: Contusions were seen in 35 cases and lacerations were found in 31 cases. In some cases, contusions and lacerations were found together.

In 39 cases, out of 50, vital organs like brain was injured.

35 cases out of 50 expired in the hospital. The scene of crime was not examined in any case.

Table 2: Death witness of cases

Death witnessed by someone	Number of cases	Percentage
Yes	41	82%
No	9	18%

Autopsy was done for all the cases at mortuary attached to the Kurnool medical college, Kurnool. Artefacts were not found in any case.

The manner of death is justifiable in all the cases. Death happened purely by assault in all the cases. Masquerades not found in any of the cases. Alcohol was found in 2 cases and poison in 1 case in toxicological analysis.
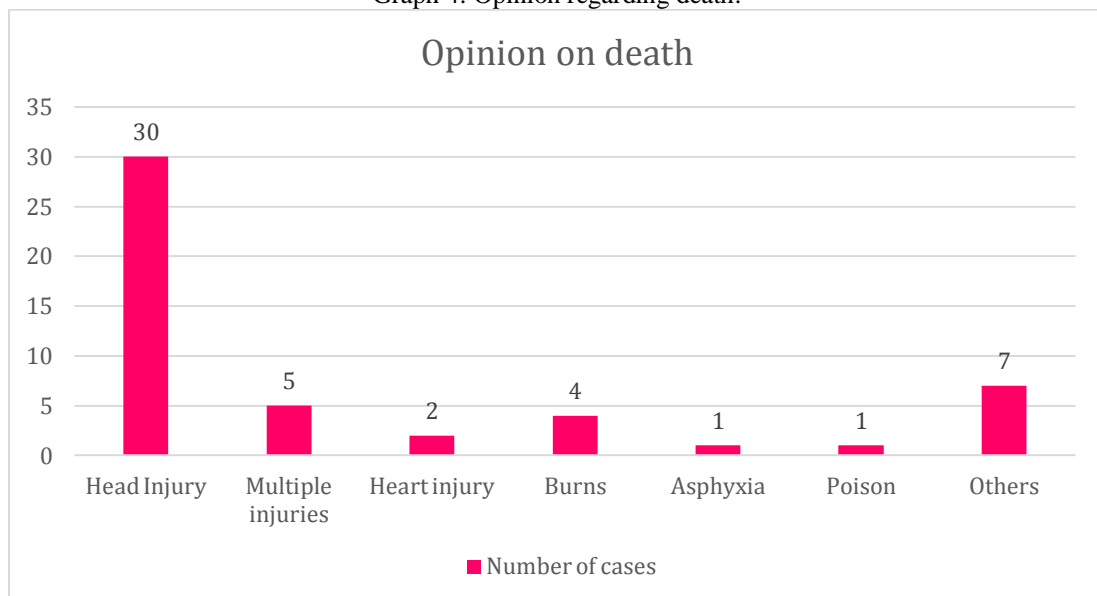
Graph 4: Opinion regarding death:

Table 3: Time since death:

| Time	No of cases	Percentage
Below 6 hours	6	12%
6-12 hours	9	18%
12-24 hours	30	60%
24-48 hours	2	4%
Above 48 hours	3	6%

Most of the cases were presented during 12-24 hours in the current study.

Table 4: Motive for homicide:

The main motive for homicide is revenge in both males and females, followed by extra marital affair.

Motive	Males	Females	% of patients
Revenge	19	4	46%
Extra marital affair	5	2	14%
Financial matters	4	3	14%
Property disputes	2	1	6%
Petty quarrels	3	2	10%
Dowry-related	0	2	4%
Theft	2	0	4%
Others	1	0	2%

Graph 5: Motive for homicide
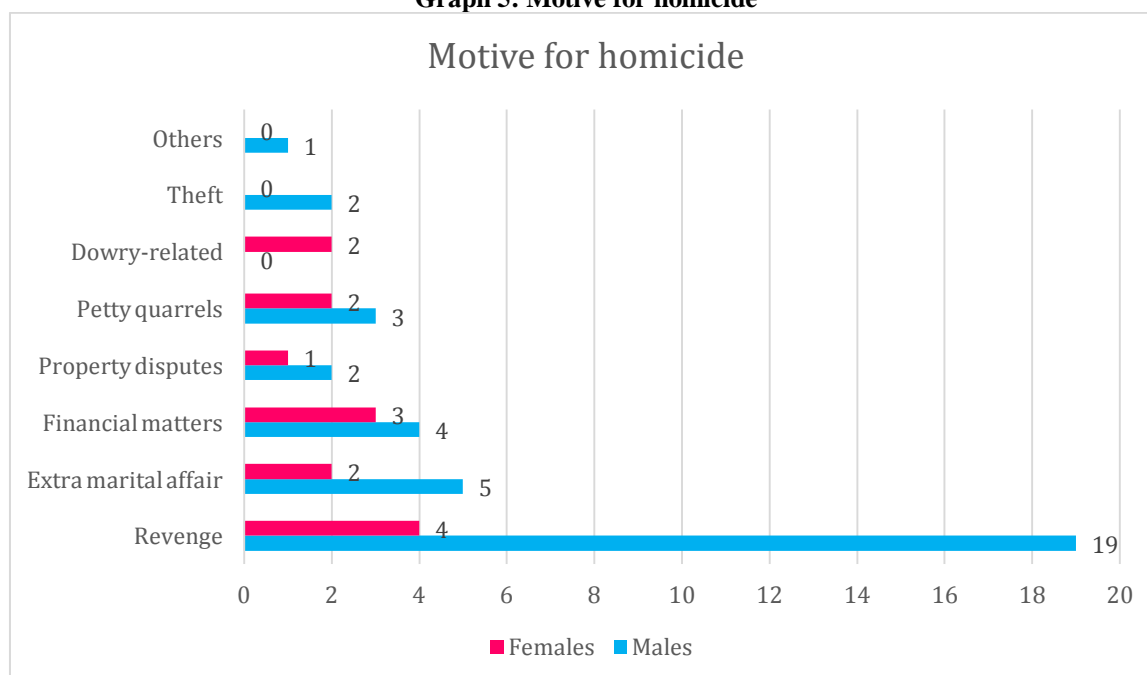
IV.   Discussion & Summary:

Most often, homicide is well planned; hence not usually adequately witnessed. So, it becomes difficult to evaluate the truth that relies on linking the act of crime to the criminal, based on various evidence. Thorough analysis, scientific interpretation of autopsy findings, including the responsibility of forensic medicine specialists, is of vital importance to recognize the medico-legal injuries in their proper perspective and help the investigating authorities and the judiciary for their legal conclusions.

Males outnumbered females among sufferers in our study with a ratio more than 2:1. The highest number of cases reported is from 31-39 years. Studies done in Pakistan[9] and Malaysia[10] revealed almost similar findings. Previous studies have also shown similar results as our study regarding sex and age. Male predominance could be due to unemployment, jealousy, revenge, lack of patience, intake of alcohol and bad accomplices, etc. In the ongoing study, Hindus were 96%, and the rest of the religions Muslims account for 4%, similar to studies[11]. This could be due to the reason that Hinduism is the most common religion in India.

We observed that most of the victims were farmers. A study conducted in Malaysia[12] revealed that most cases are semiskilled and unskilled workers. In the present study, most of the victims were married.

The study done at Poland[13] pointed out that single male and married females were the common sufferers. Reasons could be marital disharmony, disbelief, lack of proper understanding, poverty, and alcoholism.

Head injuries found to be common in our study. Studies in Pakistan revealed the chest to be the commonest site of injury, explained by the common use of firearms. Multiple injuries were also seen. The reasons for multiple injuries are firm determination on the part of the perpetrator to ensure that the victim is dead. Also, extreme hatredness may lead to multiple injuries. In our study, blunt weapons were most commonly being. This is in contrast to studies done at Canada.[14] We noticed that many patients suffered from hemorrhagic shock and craniocerebral injuries, which is in confirmative with the studies done at Nigeria[15] and India.[16]

Future recommendations:

To decrease the rates of homicide, few important steps can be taken. Uplifting the social life of the poor, reducing illiteracy by proper educational programs, giving good job opportunities, prohibition or restricted sale of alcohol can be done. Crime investigating agencies and the judiciary system should be strengthened so that the laws can be enforced stringently.

More investigations on the effects of surroundings, inherent characteristics, and psychiatric illness can be carried out on the victims.

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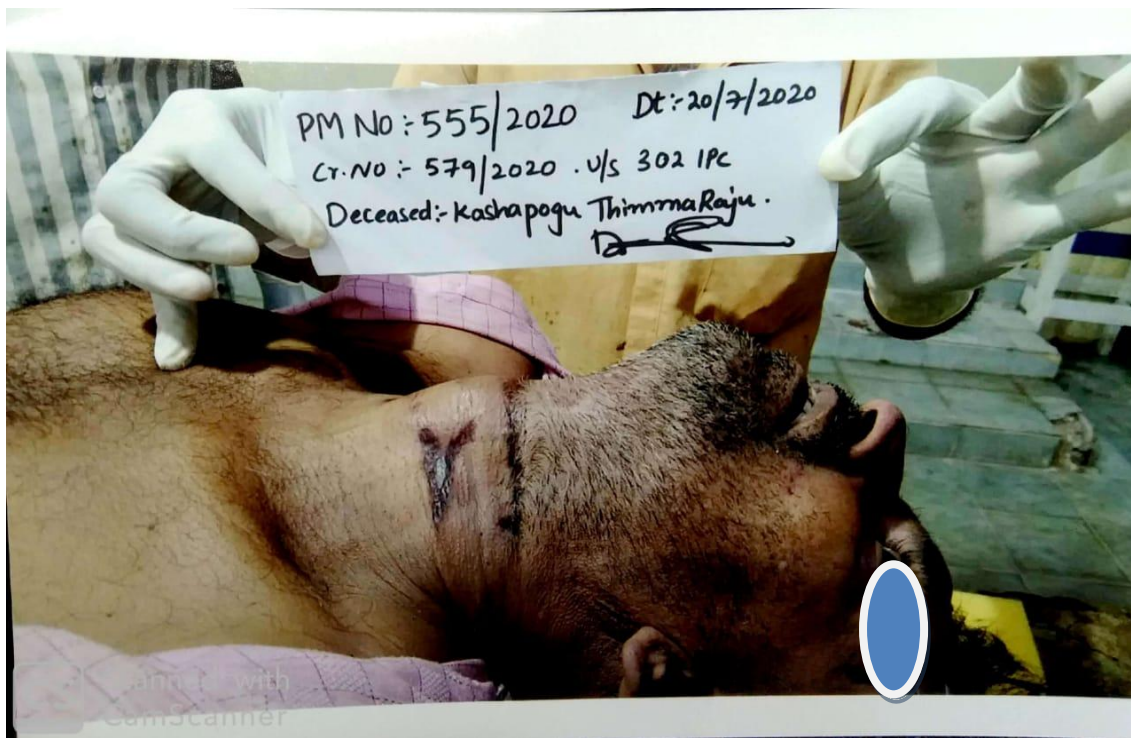
Picture showing strangulation ligature mark

Picture showing cut laceration on the right side occipital region of the head

Picture showing multiple cut lacerations on the front of face

Picture showing double edged knife used in a case of homicide