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Retrospective Analysis of the Profile of Unknown Dead Bodies – A Four Year Study in a Tertiary Care Hospital in North Tamilnadu - India.

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Abstract: *Post mortem of Unknown or Unidentified dead bodies always pose a problem in almost all autopsy centers. This may be due to various reasons such as uninterested investigating police officers, lack of proper history regarding the case and partial or complete decomposition. Opinion about the cause of death in these unknown bodies often tests the skill of the Forensic expert as autopsy yields little or no results. In these cases, identification of the body is also a greater problem. These persons have lost all identity – age, address, occupation, family except sex. The present 4 year study was undertaken to study the profile of these unknown bodies - in terms of sex, age, cause of death, place from where the bodies have been retrieved and the time duration between into mortuary & autopsy.*
Unidentified dead bodies comprised of 311 cases(10.03%) of the total 3100(100%) bodies brought for postmortem examination to the department in this four year period.Males were the highest in no of 241 cases. Maximum number of cases belonged to the age group 61-70 years (23.47%).Majority of the opinions regarding the cause of death were given as "No definite opinion" – 59 cases (18.9%), Lung disease - 57cases (18.3%) and Multiple Injuries due to Road Traffic Accident – 50 cases (16%).Regarding the analysis of the place from where the bodies have been retrieved –maximum no is from the National Highway involved in RTA – 47 cases (15.1%).As per routine protocol, Viscera for chemical analysis were sent to the Regional Forensic Laboratory in 100% of cases, and Histopathology in 10%. DNA profiling was done in 13 cases.
Key Words: *Identification, Unknown bodies, DNA Profiling, Dead, Decomposition, Cause of death.*

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I. Introduction

Unknown body is defined as a deceased person who has no authorized representative or next of kin, willing and able to make final disposition of the remains. Autopsy of Unknown dead bodies pose an important problem in all centers because of lack of identification.Ritter(3) has described itas a ''silent mass disaster''. Identification is defined as determination of individuality of a person. (1) This may be complete or partial if lacking in certain factors. For the purposes of law, identification has to be carried out both in the living and in the dead. (2) Though this is primarily the domain of the investigative agencies, the forensic experts play an important role in this process. Establishing the identity of the dead is always a challenge for the Police and the Revenue officials in our country.This is achieved by team work through conventional and scientific methods (4-8) The Forensic experts play a major role in this process of identification. This present 4 year study was undertaken in the Department of Forensic Medicine, Government Villupuram Medical College & Hospital, Tamilnadu toanalyse the profile of Unknown dead bodies as very little literature is published in regard to Unknown dead bodies in India. Establishing the identity becomes difficult when the Time since death increases and decomposition sets in. During routine Post mortem various causes of death are opined such as Injuries, Poisoning, Asphyxia and Natural diseases. In case of Unknown dead bodies when Postmortem is done after a long time due to decomposition,"No Definite Opinion regarding the cause of death "is given. All the autopsy findings are incorporated and the final opinion regarding the cause of death is given after receiving the laboratory reports.(2012-2015).In almost all autopsy centers little importanceis given where autopsies are regularly conducted on unidentifiedbodies all throughout the year. The case load of unidentified bodiesin all autopsy centers in Tamilnaduis quite alarming. To date, no study has been conducted in Tamilnadu, India, regarding the unidentifiedbodies undergoing postmortem examination.

Aim and objectives

1. To study - the profile of unknown / unclaimed bodies in terms of sex, age, cause of death, place from where the bodies have been retrieved and the time duration between into mortuary& autopsy - reported during a period of 4 years (Jan 2012- Dec 2015)
2. To explore - the causes for delay in performing post-mortem
3. To recommend measures - to hasten PM - to reduce the no. of missing persons / unclaimed bodies
4. To help the families, whose members are missing - for early retrieval of the bodies for performing last rites.

II. Material and Methods

The Unidentified dead bodies brought to the mortuary for postmortem at the Department of Forensic Medicine, Government Villupuram Medical College & Hospital; Tamilnadu during the four year period 2012 – 2015 comprised the material for the study. All the postmortem reports, inquest papers, history of the cases, information elicited from the Investigating Police officers at the time of autopsy were scrutinized and all data compiled.

Inclusion Criteria

All cases registered as unknown bodies by the Police

Exclusion Criteria

Fully Skeletonised Bones

III. Observations and Results

Table-1 Profile of unknown cases – 2012 to 2015 [4 years]

Year	Male	Female	Total no. of unknown bodies	Total no. of Autopsies	Percentage of unknown deaths
2012	54	15	69	751	9.2 %
2013	51	15	66	720	9.2 %
2014	68	22	90	755	11.9 %
2015	68	18	86	874	9.8 %

Fig 1: Analysis of Gender-wise distribution of unknown cases

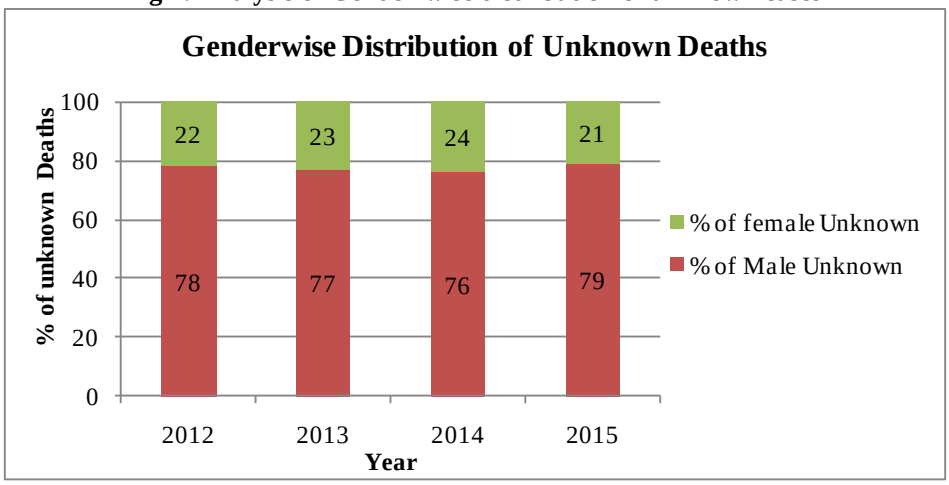


Table 2-Age & Sex distribution

Year	2012		2013		2014		2015	
Sex / Age group	M	F	M	F	M	F	M	F
20-30 years	5	2	6	0	7	2	5	2
31-40 years	12	4	11	3	8	3	13	4
41-50 years	16	3	10	2	16	4	8	3

51-60 years	10	3	8	3	15	8	17	1
61-70 years	6	1	14	6	17	4	19	6
71-80 years	3	1	2	1	5	1	6	2
>80 years	2	1	0	0	0	0	0	0
Total	54	15	51	15	68	22	68	18

Fig:2 Analysis of Age and sex distribution

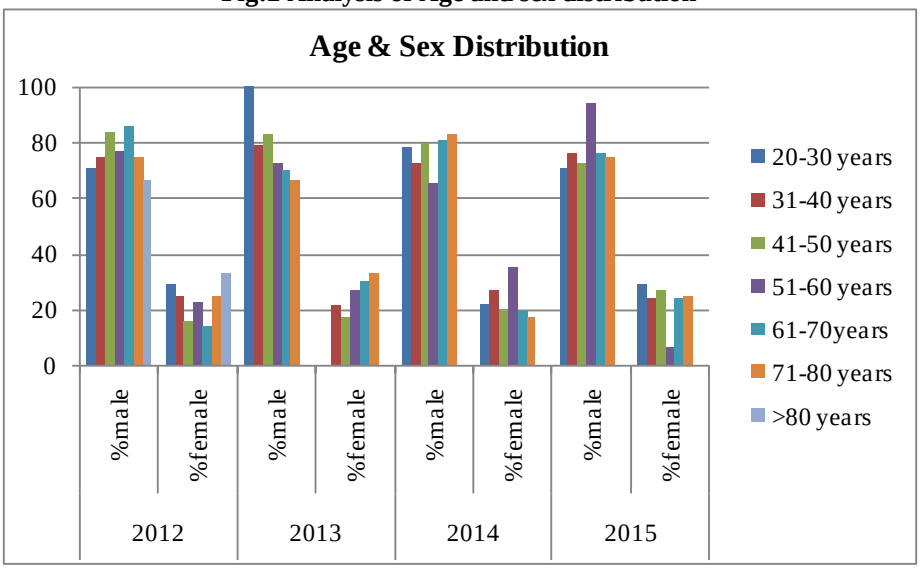


Table 3 - Cause of Death

Cause of Death	2012		2013		2014		2015		Total	Percentage
	M	F	M	F	M	F	M	F		
No definite opinion	20	5	12	2	5	5	5	5	59	18.97%
Road Traffic Accident-Multiple Injuries	9	0	7	2	16	4	8	4	50	16.08%
Road Traffic Accident-Head injury	7	0	7	7	5	1	6	1	34	10.94%
Train Traffic Accident	1	0	0	1	5	2	4	2	15	4.83%
Coronary artery Heart Disease	5	2	8	0	9	1	9	1	35	11.26%
Myocardial Infarction	3	0	0	0	0	0	0	0	3	0.96%
Lung Disease	3	1	12	2	11	2	25	1	57	18.33%
Cerebro vascular Accident	0	0	1	0	1	0	1	0	3	0.96%
Poisoning	1	0	0	0	4	1	3	0	9	2.89%
Drowning	2	5	0	0	3	1	4	3	18	5.79%
Hanging	2	0	0	0	5	1	1	1	10	3.22%
Cirrhosis	0	0	2	0	1	0	0	0	3	0.96%
Sepsis	0	2	1	0	0	0	1	0	4	1.28%
Metabolic Encephalopathy	1	0	0	0	3	2	1	0	7	2.25%
Snake bite	0	0	1	0	0	0	0	0	1	0.32%
Starvation	0	0	0	0	0	1	0	0	1	0.32%
Diarrheal Disease	0	0	0	0	0	1	0	0	1	0.32%
PLHA	0	0	0	1	0	0	0	0	1	0.32%
Total	54	15	51	15	68	22	68	18	311	100%

Fig 3: Overall analysis of cause of death

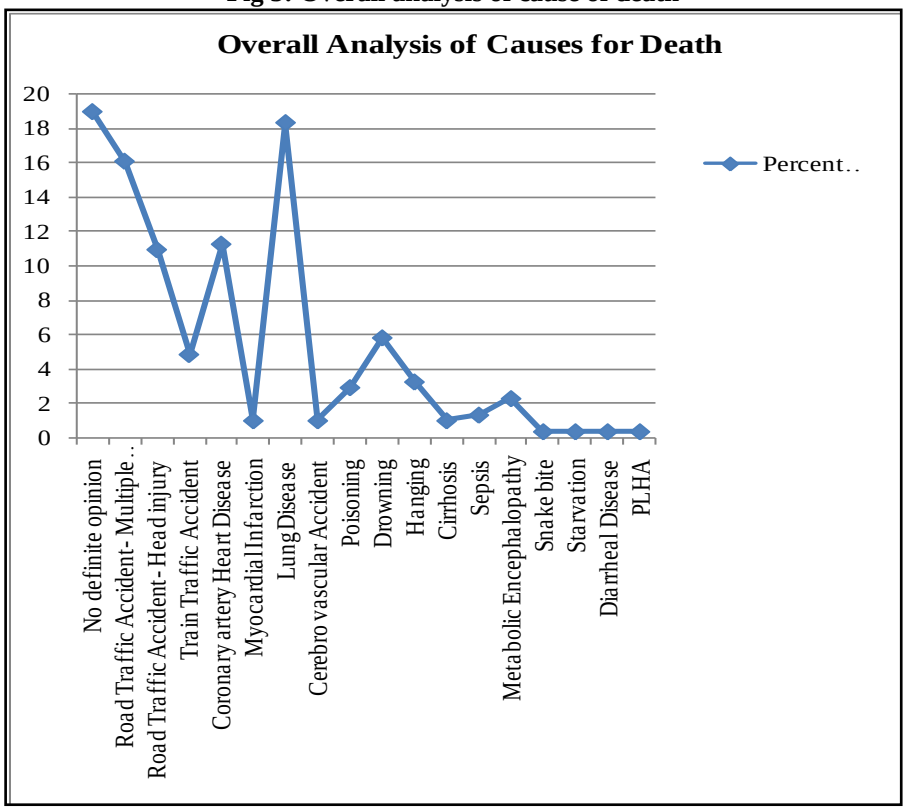


Table 4 - Places where dead body was found

Places where dead body was found	2012		2013		2014		2015	
	M	F	M	F	M	F	M	F
Our Medical College Hospital	5	2	4	1	9	5	6	1
Other General Hospitals	1	0	0	0	0	0	0	0
Streets	12	3	8	2	4	0	10	1
Town Roads	4	0	2	0	12	5	7	1
Bus Stops	0	0	4	1	5	2	3	0
Bus Stands	5	2	5	0	3	0	5	1
State Highways	0	2	0	2	0	0	3	1
National Highways	9	1	7	6	11	1	9	3
Railway Tracks	4	0	5	1	9	1	4	3
Railway Stations/ Platforms	1	0	2	1	7	0	6	1
Trains	0	1	2	0	2	1	0	0
Drainages	0	0	0	0	0	0	1	0
Wells	4	2	0	0	2	1	1	1
Lakes	2	1	3	0	0	1	2	3
Rivers	0	0	0	0	0	1	0	0
Fields	5	1	5	0	1	1	2	0
Temples	2	0	3	1	2	3	8	0
Forests	0	0	0	0	1	0	1	1
Hills	0	0	1	0	0	0	0	1
Total	54	15	51	15	68	22	68	18

Fig 4: Overall Gender-wise distribution of place of death

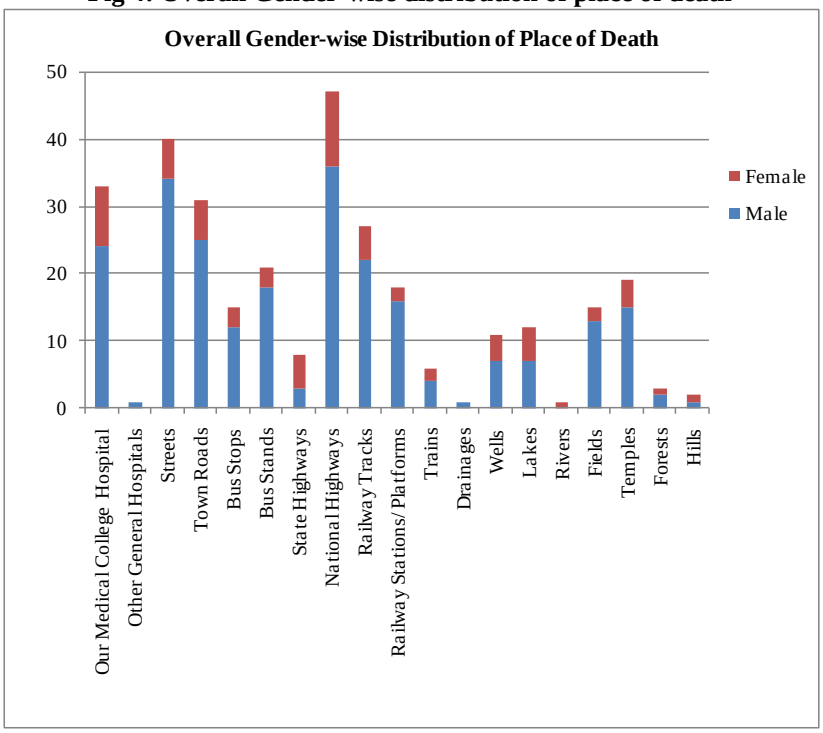
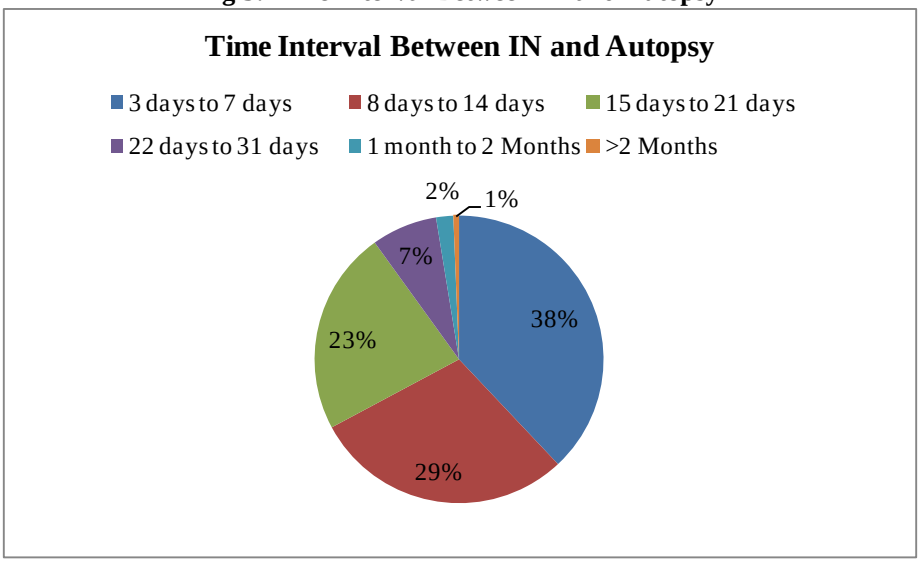


Table 5 - Time interval between IN and Autopsy

Time between in and Autopsy	2012	2013	2014	2015	Total	Percentage
3 days to 7 days	30	27	39	22	118	37.94%
8 days to 14 days	12	22	30	27	91	29.26%
15 days to 21 days	16	12	14	29	71	22.83%
22 days to 31 days	10	3	5	5	23	7.40%
1 month to 2 Months	1	1	1	3	6	1.93%
>2 Months	0	1	1	0	2	0.64%
Total	69	66	90	86	311	100%

Fig 5: Time Interval Between IN and Autopsy



A total of 3100 bodies were brought for postmortem examination to the mortuary of the department during the period under study. Of these, unidentified cases comprised 10% (311cases). Males 241 (77.5%) females 70(22.5%) (Table1).

Maximum number of cases belonged to the age group 61-70 years (23.5%); followed by the age groups 51-60(20.9%) 41-50 years (19.9%). The age group of > 80 years was the least with 3 cases (0.96%) (Table 2).

Majority of the opinions regarding the cause of death were given as "No definite opinion" – 59 cases (18.9%), Lung disease - 57cases (18.3%), Multiple Injuries due to Road Traffic Accident – 50 cases(16%), Coronary Artery Heart Disease - 35 cases (11.25%), Head Injuries due to Road traffic Accident -34 cases (10.93%) Sepsis – 4 cases. Starvation, Diarrheal disease, PLHA forms the least with 1 cases each (Table 3).

Regarding the analysis of the place from where the bodies have been retrieved – from the National Highway involved in RTA – 47 cases (15.1%), found dead in the streets – 40 cases (12.86%),admitted as Unknown in Government Villupuram Medical College and died – 33 cases (10.6%), Found dead in the town road – 31 cases (9.96%), dead in the railway track – 27 cases (8.68%). Found dead in the river, in the District Hospital and in a drainage canal is the least with 1 case each (Table 4).

When the time period between body was brought to the Mortuary and when autopsy was taken up was analysed – maximum no of 118 cases (37.94%) - Postmortem was done between 3-7 days, 91 cases(29.26%) - PM was done between 8-14 days, 71 cases (22.83%) - PM done between 15-21 days, 23 cases (7.40%) - PM taken up between 22-31days, 6 cases (1.93%) – PM done between 1 - 2 months, 2 cases (0.64%) PM done after > 2 months. The longest interval is 73 days (Table 5).

As per the protocol viscera was collected and sent for all the cases to the Forensic Science Laboratory for chemical analysis. Histopathology was requested for 10% of the cases.DNA profiling was done in 13 cases. Tattoo marks were noted in 10 cases which had names of persons engraved in the local Tamil language in them. This when recorded will give positive identifying features to the kin of the deceased.

IV. Discussion

People like skilled & unskilled laborers, beggars & orphans from neighboring villages are migrating to nearby towns for want of livelihood. Increased longevity of life poses several risks such as disownment by dear ones, dementia, disability, displacement and to loss of identity.Because of delay in identifying the bodies, these bodies are kept in the mortuary for an undue long period. This leads to increase in cost of maintaining and running of the freezers. Delay in conducting PM - obscures the Autopsy findings because of decomposition and makes it difficult to arrive at the exact cause of death.

Unidentified bodies brought for postmortem examination in our center comprise a significant and important group. These cases really test the skill and expertise of the specialist, mortuary attenders and the Police. As per protocol various methods are followed to establish the identity of the dead person. Details of the deceased like photographs, physical measurements & particulars of dress etc are published in the Newspapers. Similar announcements are also done in the local TV channels. There is a waiting period of about 72 hours. A forensic medicine specialist can contribute much by giving detailed information gathered from a thorough examination and dissection of the body. It is also his duty to opine regarding the cause, manner and nature of death, based on his findings& laboratory results.

A thorough search of the literature did not yield much information regarding the identification of the unidentified dead in the Indian context. Mostly, they were devoted to individual body identification or identification of victims of mass disasters. (10,12,13)

In our present study, unidentified bodies comprised 10.03% of the total autopsy load of the department during the period under consideration. This is similar to the study by Randy Hanzlick et al, where it was observed that the unidentified bodies account for about 10% of the total autopsy load. (13) Males were predominant, accounting for 97% of the cases. Similar findings were observed in a study in Maharashtra. (10)In a country like India, males are considered to be the head of the family, and they go in search of job opportunities in the nearby cities. The female usually take care of her family.

V.Conclusion

Unidentified dead bodies were about 10.03% of the total dead bodies coming for autopsy in the Department of Forensic Medicine, Government Villupuram Medical College,Tamilnadu,during the study period of 4 years.(2012-2015). A total of 3100 bodies were brought for postmortem examination to the mortuary of the department during the period under study. Of these, unidentified cases comprised 10% (311cases).

Males were more when compared to the females. Males – 241 cases (77.5%), females- 70 cases (22.5%).

Maximum number of cases belonged to the age group 61-70 years (23.5%); followed by the age groups 51-60(20.9%) 41-50 years (19.9%). The age group of > 80 years was the least with 3 cases (0.96%).

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The bodies were retrieved – from the National Highway involved in RTA – 47 cases (15.1%), found dead in the streets – 40 cases (12.86%),admitted as Unknown in Government Villupuram Medical College and died – 33 cases (10.6%), Found dead in the town road – 31 cases (9.96%), dead in the railway track – 27 cases (8.68%). Found dead in the river, in the District Hospital and in a drainage canal is the least with 1 case each.

The time period between body was brought to the Mortuary and when autopsy was taken up was – maximum no of 118 cases (37.94%) - Postmortem was done between 3-7 days, 91 cases(29.26%) - PM was done between 8-14 days, 71 cases (22.83%) - PM done between 15-21 days, 23 cases (7.40%) - PM taken up between 22-31days, 6 cases (1.93%) – PM done between 1 - 2 months, 2 cases (0.64%) PM done after > 2 months. The longest interval is 73 days.

Viscera collected and sent for all the cases to the Forensic Science Laboratory for chemical analysis. Histopathology examination was done for 10% of the cases and DNA profiling in 13 cases.

In certain cases of unknown bodies, when an old fracture or an implant is suspected whole body radiographs may be useful for establishing the identity (11).

DNA analysis and fingerprinting should be done in all cases so that proper records can be stored and helpful in future identification of the deceased.

Investigation by the Police should be taken up more quickly.Active investigation should be carried out by the police and accountability of the police has to be fixed to get the body identified.An effective public inquest should be held at the place of death (in case of natural death)

.Colour photography of the bodyin various views, of clothes, the tattoo marks, scars, deformities, etc will the relatives in identifying such bodies. These should be displayed in all public places in designated noticeboards and expedite the request for PM. Valuable information regarding the identity of the Individual and cause of death is lost when Time since death increases and decomposition sets in.

Reports regarding missing people should be made early and a "Missing Persons Registry" can be maintained in every municipality. This information can be linked through the Social welfare department throughout the state.For early identification, finger prints can be incorporated in voter's card also

.Dental records of all the people should be maintained properly in our country since PM data when compared with AM data give valuable information for identification.

A data bank consisting of all these valuable information can be maintained in every municipality and linked throughout the states. In India, as longevity is on the increase, the no of old people in also increasing these days. Social awareness about the elderly should be increased among the younger generation. The necessity and importance of taking good care of elders at home should be cultivated at a tender age.

In each Medical College the Forensic Medicine department can form and maintain an "Unknown case Registry" where all information is stored such asa whole body photograph-with clothes, without clothes, with detailed account of injuries at the time, when the body is checked in etc.

A lot of useful and valuable information can be obtained when the Forensic doctor and the Investigating police officer work as a team. Such information is of immense help in establishing the identity and in forming an opinion about the cause and manner of death.

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